Ditransitives, Purpose Clauses and Control; most of a story of almost everything

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Abstract

In attempts to formulate theories of antecedent selection in control constructions there has been an overwhelming preference to restrict the search for answers to the domain of control in complements. This paper seeks to rectify this situation by examining the patterns of control behaviour found in purpose clause adjunts. Taking as our starting point purpose clauses attached to ditransitive matrix clauses, a theory of control is developed in which dontroller choice is dependant on event semantics, with crucial appeal to notions of transfer, possesssion and asymmetry in result state predicates. Predictions made by this theory with regard to purpose clause control in Korean are shown to be correct. This theory is shown to have explanatory power beyond controller selection and to be readily generalisable to control in complements.

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Contents

1. Introduction

Control theory is the area of grammar concerned with accounting for various properties of certain phonologically null arguments in non-finite clauses. Control is usually dichotomised into obligatory and non-obligatory varieties. In obligatory control the null argument is assigned reference by an overt argument, as in 1. a). Non-obligatory control, in b), is often treated as a kind of elsewhere case, the reference of the null subject possibly being generic or determined by discource factors.

1. a) Sally expects _ to become fat.
   b) _ Eating enormous amounts of casserole is a brilliant way to become fat.

The primary characteristic of obligatory control is the presence of a single NP which acts as the antecedent for the subject gap. In cases of complement control, this NP must c-command the gap which it controls and is uniquely determined as the controller. A more thorough discussion of these properties will appear in section 3.3.

Obligatory control is to be distinguished from the superficially similar cases of raising.

2. a) Ethell seems _ to understand.
   b) Adrian managed _ to understand.

The a) example is a raising contruction, the b) example obligatory control. The difference is that in raising the subject has no semantic relationship with the matrix verb, whereas in control it does; the primary distinction between the two is thematic in nature. However, this difference spills over into syntax on the basis of the theta criterion. This states that every non-explitive argument must be assigned a theta role and that an argument may only be assigned a single theta role.

This forces an analysis of raising in which the embedded subject moves to the matrix subject position; the athematic nature of the matrix subject position means that the moved NP does not receive another thematic role and as such does not violate the theta criterion. Such an analysis in cases of control however would result in a violation of the theta criterion; both *manage* and *understand* assign a thematic role to their subject, meaning that were *Adrian* in 2. b) subject of them both it would carry two roles.

From Rosenbaum's (1967) equi-NP deletion to Boeckx and Hornstein's movement theory of control (Hornstein 1999, Boeckx and Hornstein 2003, 2004), control theory has been the focus of much research in syntax and semantics over the last fourty years. Different views of the distribution and interpretation of null arguments have been put forward in a multitude of different frameworks, often as a central argument in their favour. Many researchers work with the hypothesis that there is a phonologically null NP which is specific to control constructions, PRO, which shall be discussed shortly.

The twin problems of PRO, its distribution and interpretation, are still very much open debates. In the case of the former, we must explain why null arguments only appear in very specific positions, with most researchers focussing on the subject position of non-finite actional complements. What is special about PRO, or the non-finite subject position, or both, that allows an NP with no phonological content? Is some aspect of positions which only allow overt NPs absent in this context? Or are there additional features or extra information which mean PRO is licit?

In the case of the latter, the aim of our research must be an account, applicable across the entire range of control constructions, of the means by which the antecedent of PRO is determined.

The distribution of these null arguments has been explained in terms of, among other things, binding theory, case theory and A-movement (Chomsky 1981, Chomsky and Lasnik 1993 and Hornstein 1999 respectively) while answers to the question of interpretation can, broadly speaking, be bifurcated into those relying on syntax and those relying on semantics.

In simple terms, a syntactic theory states that the phonetically null subject acquires its reference from the closest preceeding NP. Motivation for this kind of approach may be found in the following pair.

3. a) Bill wants _ to make a casserole.
   b) Bill wants Cedric _ to make a casserole.

As the only potential antecedent the subject *Bill* controls in a). In b) there are two potential antecedents and it is the one closest to PRO, *Cedric* in object position, which controls; *Bill* in subject position cannot control because to do so would be to control across a closer potential

controller. Observations such as this formed the basis for the Minimal Distance Principle formulated by Rosenbaum (1967), to be discussed in greater detail below.

This contrasts with a semantic theory of control in which control configurations are a direct consequence of the meaning of the matrix verb. Motivation for this kind of approach may be found in the following pair.

4. a) Bill wants Cedric _ to make a casserole.
   b) Bill promised Cedric _ to make a casserole.

In a) the matrix verb is one of volition, thus denoting something Bill would like Cedric to do and placing the responsibility for the making of a casserole with Cedric and yielding object control. On the other hand *promise* in b) is a verb of commitment and as such places responsibility for the making with Bill, yielding subject control. In the case of semantic theories the reason that some NPs cannot control is essentially the same as the reason that some NPs can; promising does not place responsibility for the promised action in the hands of the promisee so to have object control in these instances would be semantically incongruous.

Clearly, the many faces of control pose a complex problem. On the one hand the limited contexts in which we find obligatory control relations makes it clear that there is some syntactic story to tell. On the other hand, many researchers will tell you that the determination of the control relation itself is semantically underpinned. I believe that it is in part this choice between two major components of language have made it so difficult to find a consensus on even the most salient issues.

It is important to bear in mind that the view of control which is assumed may have repercussions beyond control theory, impacting the overall view of grammar which is possible, again due to the meeting of syntax and semantics. The degree to which one assigns responsibility for control to one or other component is to a great extent a more general commitment to the scope of the responsibilities syntax. Allowing syntax to act deterministically in matters of interpretation diminishes the role of semantics.

This dissertation will have only brief remarks on the distribution of controlled arguments, focussing primarily on the means by which their reference is determined. The area on which we shall focus will be control into purpose clauses from matrix clauses with three arguments; ditransitives and

dative double objects. As we shall see, the behaviour of these constructions provides a good basis for putting forward a theory of control based on event semantics; the sense of transfer they encode alters the result states of the verbs which are used in them and this changes controller choice in a predictable way.

A note on terminology is in order here. Many theories of control discuss the empty subject position in terms of the phonologically null NP PRO. The motivation for such an element is the need, motivated by considerations of governent and binding theory, for some element to bear the thematic role assigned to the subject position of the embedded non-finite verb. PRO is taken to be exclusive to the specifier position of non-finite IPs, though currently there does not seem to be a satisfactory explanation of this distribution. Other approaches do not posit such an element, preferring rather to think of the embedded subject position as being genuinely empty or even nonexistant. Instead control relations can be stated in terms of links between argument slots in predicates. Views along these lines can be found in Chierchia 1989 or Sag and Pollard 1991 among others.

Given that this dissertation will concentrate on an area outside the domain which is usually considered by studies of control (that is, control of subject position in non-finite complements), it shall be largely avoid the PRO notation. This should not be interpreted as denial of the existence of PRO, being intended rather as a neutral stance. There will be a discussion towards the end on the suitability of extending PRO to use in the contexts discussed here and, should such an extension prove not to be viable, how this impacts upon the status of PRO in its natural habitat.

However, while uncertainty reigns on PRO's reality in syntax, in writing it allows for much more succinct exposition; where it is referred to it is either used in the context of the work of those who believe it exists or for the sake of avoiding unnecessary prolixity.

On a further terminological point, we should make clear our use of the terms used to refer to three argument verb constructions. *Ditransitive* is intended to refer to [V NP NP] constructions while *dative double object* refers to constructions of the form [V NP PP]. The wording of the latter is somewhat clunky however, so on occasion these constructions will be referred to merely as *dative*. Very often assertions made on properties of ditransitives hold equally for dative double objects and in this regard *ditransitive* will often be used as shorthand for both three argument constructions. Where their properties diverge we shall be explicit about the relevant features of each.

The layout of this dissertation shall be as follows; section 2 will be a review of some of the primary works on control to date, section 3 will outline the data we shall consider here as well as some data which will be excluded from our analysis. It will also aim to show that the cases of control we consider form a single class with other instances of obligatory control. Sections 4 and 5 will respectively give the views of the ditransitive construction and adjunction adopted here. In section 6 the event semantic view of control to be put forward here will be laid out. It shall be shown that as well as providing a basis for controller choice our theory gives an explanation for some additional observations on various properties of the controlled gaps. We also show that an event semantic theory receives cross-linguistic corroboration with data from Korean. This theory is then applied to complement control in section 7 and section 8 provides some conclusions and suggested areas of further research.

2. A Brief History of Complement Control

The earliest attempts to formulate theories of control were primarily syntactic in nature. Although the explanation for the distribution of PRO varies in different accounts, these theories almost always determine the controller of PRO via appeal to the Minimal Distance Principle (MDP), or some descendant of it, first formulated by Rosenbaum (1967) in his account of equi-NP deletion. Though the precise formulation of this is different for different authors, it can be essentially summarised as "the closest c-commanding NP controls PRO". Theories of this kind were prevelant in work within government and binding theory (Larson 1991) as well as elsewhere (see for example Williams 1980) and continue to appear in current work in the minimalist program (Hornstein 1999).

Others (Sag and Pollard 1991, Jackendoff and Culicover 2003) argue that this is not the correct approach to take and that an appeal to semantics gives a superior account of controller choice. Among the criticisms of syntactocentric theories is that they fail to account for the control behaviour of *promise*, which subcategorises for an object NP and an infinitival complement yet shows subject control.

1. I_i promised my mum $\__i$ to be home by ten.

This is possibly the most frequently cited argument in favour of a semantic view of controller

choice; in such a view *promise*'s exceptional control behaviour is not exceptional but rather expected by virtue of its meaning. (Sag and Pollard 1991)

In this section I shall give an outline of previous and current theories of control from both traditions. Arguments in favour and against shall be given for specific theories as well as for the general views taken. As none of the theories to be discussed consider adjunct control to be central to the control problem conclussions on the correct approach to control will be reserved for later on when our purpose clause data can be brought to bear on the options outlined here.

2.1 Syntactic distribution

2.1.1 Binding theory

At the advent of goverment and binding theory (Chomsky 1981), its treatment of control was considered one of its strengths. This theory's account of the distribution of PRO was based on the observation that it appeared to be both pronominal and anophoric.

2. a) PRO To write a second dissertation on control would be a mistake.
   b) Ally_i decided PRO_i to write a second dissertation on control, despite the advice in 2 a).

In a) PRO is pronominal, where its reference can be determined by the discourse context (or may be generic), whereas in b) it is anaphoric, depening on the matrix subject to determine its reference.

Under the conditions of the binding theory this meant that PRO must be both free and bound within its governing category. The result of these contradictory requirements was that the only position which could license PRO was the specifier of a non-finite IP, the reasoning being that because non-finite I is unspecified for person and number it is not strong enough to govern and is therefore not a governing category. Also, in this position PRO cannot be governed by the matrix verb, as in exceptional case marking (ECM) configurations with verbs such as *believe*, because of the blocking effect of the CP within which the IP containing PRO is embedded.

Not only does this provide an account of the distribution of PRO, it also explains the differences between PRO and lexical NPs; all lexical NPs must be properly governed and as such cannot appear as the specifier of a non-governing category. PRO on the other hand must *not* be properly governed

and as such can *only* appear as the specifier of a non-governing category.

However, it was subsequently shown that the initial assertions on the dual nature of PRO were incorrect (Bouchard 1984, among others). Arguments to this effect were put forward by Chomsky and Lasnik (1993), with particular focus on the distributional differences between PRO and standard anaphors. They note that not only are anaphors and PRO generally found in different contexts (3) but also that in cases where a structural position can be filled by both an anaphor and PRO they appear in complementary distribution. (4)

3. a) John injured himself.
   b) *John injured PRO.

(C&L's 249 and 250)

4. a) *John believes PRO to be clever.
   b) *John tries himself to be clever.

(C&L's 251 and 252)

It is also shown that PRO is always pronominal *or* anaphoric, in non-obligatory and obligatory control respectively, never both. If PRO is ambiguous in this way then the dual requirements imposed by binding theory no longer apply and this explanation of its distribution is no longer valid. Additionally, if PRO is ambiguous and as such cannot at one time have all the features which government and binding theory assigns to it then the entire government and binding formulation of PRO is incorrect.

2.1.2 Case theory

In light of these facts Chomsky and Lasnik suggest a shift in the approach taken to the distribution of PRO, ending the appeal to binding theory and relying instead on case theory. Here, PRO's distribution is explained in terms of a case which is unique to non-finite Is, null case. In order for PRO to be licensed it must be assigned null case and null case may only be assigned to PRO. This provides some explanation of the grammaticality contrast in 5 (from Boeckx et al. 2010)

5. a) John hoped [PRO_i to be elected t_i]
   b) *John hoped [PRO_i to appear to t_i [that Bill was innocent]]]

Because passive object position is non-case assigning, movement of PRO to the null case assigning specifier position in a) is licit. The movement in b) on the other hand is between two case assigning positions and thus gives rise to ungrammaticality.

While this version of events still allows us to offer some explanation of the distributional differences between PRO and lexical NPs it is defficient in a number of ways. The most glaring of these is that this account is essentially entirely stipulative; saying that the distribution of PRO is the product of an undetectable case feature which can only be checked by PRO and which, by happy coincidence, is only assigned in a position in which only PRO appears does little more than restate the distribution facts in slightly different terms. Following this there has been a shift away from explaining the distribution of PRO via case theory. Indeed, Landau (2006) and Sigurðsson (1991), among others, have put forward specific and convincing arguments against taking this approach, both arguing that PRO bears case in the same way as overt NPs.

2.1.2.1 PRO bears standard case

Sigurðsson (1991) presents evidence from Icelandic morphological case chains and predicate agreement. In the former, floating quantifiers agree with their relevant lexical NP, as 6 (Sigurðsson's 6 too) demonstrates.

6. a) Strákarnir komust allir í skó1a.
   The boys(N) got all(N,pl.,m.) to school
   The boys all managed to get to school.
   b) Strákana vantaði alla í skó1ann.
   The boys(A) lacked all(A,pl.,m.) in the school
   The boys were all absent from school.

Here *allir* can only appear in the same inflectional form as the lexical subject NP. This behaviour is also found in PRO headed infinitives.

7. a) Strákarnir vonast til [að PRO komast allir í skó1a].
   The boys(N) hope for to PRO(N) get all(N) to school
   b) Strákarnir vonast til [að PRO vanta ekki alla í skó1ann].
   The boys(N) hope for to PRO(A) lack not all(A) in the school

Even in cases like the b) example, where the case of PRO is distinct from that of its antecedent, we see agreement between *allir* and PRO. This shows that it is not merely a case of the antecedent transferring its case to PRO.

This conclusion is supported by the data from predicate agreement. This concerns agreement between nominals and verbs, for person and number, and between nominals and adjectival predicates and passive participles, for person, number and case. These agreements only take place with nominative subjects, in all other cases we find default forms, as 8 below illustrates (Sigurðsson's 9 and 12 a) respecively.)

8. a) Strákarnir höfðu verið duglegir.
   The boys (N, pl., m.) had (3,pl.) been energetic (N, pl., mm.)
   b) Strákarnir hafðu verið kalt.
   The boys(D) had(dflt) been cold(dflt)

When we examine verbal and predicative agreement in infinites we see identical agreement patterns.

9. a) Strákarnir vonast til [að PRO verða aðstoðaðir].
   The boys(N) hope for to PRO(N) be aided(N, pl., m.)
   b) Strákarnir vonast til [að PRO verða hjálpað.
   The boys(N) hope for to PRO(D) be helped(dflt)

Thus in Icelandic the behaviour of PRO with regard to case is the same as that of lexical NPs in every identifiable respect.

Sigurðsson's findings are complementary to those of Landau (2006) who presents similar case concord data from, among others, Hungarian and Romanian. Again, the most telling examples are instances where PRO and its controller bear distinct cases. The following examples are from Hungarian and Romanian respectively (Landau's 1 c) and h).

10. a) Illetlenség volt Mari-tól [PRO ilyen türelmetlen-nek lennie].
    Impoliteness was Mary(Abl) PRO(D) so impatient(D) to-be(3, sg.)

It was impolite of Mary to be so impatient.

b) Maria va încerca [PRO să nu i se facă ei prima dor de Bucharesti].

Maria(N) will try PRO(D) PRT *not miss her(D) the first of Bucharest*

Maria will try not to be the first of them who misses Bucharest.

Finally, citing San Martin (2004), Landau presents material from Basque. Here we find 3 structural cases, absolutive, ergative and dative, which are sequentially discharged in that order. This is demonstrated by the following paradigm of unaccusative, transitive and ditransitive examples from Basque (San Martin's 97-99).

11. a) Jon bihar etorriko da.
    John-ABS tomorrow come-Fut Aux
    'John will come tomorrow.'
    b) Jonek ogia erosi du.
    John-ERG bread-Det-ABS buy Aux
    'John has bought bread.'
    c) Jonek Mariari ogia eman dio.
    John-ERG Mary-DAT bread-Det-ABS give Aux
    'John has given bread to Mary.'

In a) the subject is the only argument and it is assigned absolutive case. In b) it is the direct object of the transitive verb which receives absolutive case, the subject being marked as ergative. This pattern is repeated in the ditransitive c), with the addition of dative case marking the indirect object. The absent combination, absolutive and dative with no ergative argument, does not occur. Turning now to control contexts we see the following.

12. Jon [PRO Mariari ogia ematen] saiatu da.
    John(A) PRO(E) Maria(D) bread(A) give try aux

In the infinitival clause here we see that absolutive and dative case have both been assigned, implying that ergative case has also been assigned. In this context PRO is the only NP which could carry it. Again, this case is distinct from that of PRO's antecedent, *Jon*.

This cross linguistic corroboration adds support to the claim that PRO bears case in the same

manner as lexical NPs.

> "To the extent that languages provide morphological cues as to the case of PRO, they all converge on the conclusion that PRO bears standard case."
>
> (Landau 2006, 157)

With this in mind the null case theory of PRO's distribution becomes untenable; if the PRO in 12 bears ergative case then it cannot also bear null case.

2.1.3 Landau's Agree based approach

Although not a theory of PRO's distribution, Landau (2001) puts forward a proposal for the mechanism by which control relations may be established. That is, rather than the syntactic reality of PRO, he deals with the syntactic reality of control.

In this view the embedded subject position and the controller are linked via agreement relations. In this view controller selection is not a product of the means by which PRO is linked with its antecedent (as in the movement theory of control to be discussed below); rather the syntactic connection between the two acts only to delineate the domain in which the antecedent of PRO must appear.

In constructing this theory he draws differences between exhaustive control and partial control. In the former the antecedent must be referentially identical to PRO, whereas in the latter the reference of the antedecent need only be a part of the reference of PRO.

13. a) The chair$_i$ managed PRO$_i$ to gather the committee at 6.
    b) *The chair$_i$ managed PRO$_{i+}$ to gather at 6.
    c) The chair$_i$ preferred PRO$_{i+}$ to gather at 6.

Landau divides control complements into 7 semantic classes, each of which comes under exhaustive or partial control. The classes are divided as follows (example from Landau p. 37).

14. **Exhaustive control** verbs are;
    Implicative – John managed to solve the problem.

Aspectual – John began to solve the problem.

Modal – John had to solve the problem.

Partial control verbs are;

Factive - John hated to solve the problem.

Propositional – John claimed to have solved the problem.

Desiderative – John hoped to solve the problem.

Interrogative - John wondered how to solve the problem.

On top of this, Landau proposes that the feature which distinguishes the two classes is the presence of tense in the infinitive; verbs of partial control are the only ones which can select a complement denoting an event which is not tense-referentially identical to the event denoted by the matrix clause.

15. a) *Yesterday, John managed to solve the problem tomorrow.
    b) Yesterday, John wanted to solve the problem tomorrow.

(Landau's 11, 6)

Additionaly, Landau points out that partial control induces only semantic plurality, not syntactic plurality, on PRO. This distinction can be observed in non-control contexts, where collective predicates can have syntactically singular subjects but plural morphology on predicates and anaphors requires a syntactically plural subject.

16. a) I saw the committee gathering.
    b) *The government cleared themselves of responsiblity.[1]

The distinction can be demonstrated in a control envirmonment with the following minimal pair.

17. a) John told Mary that he preferred to meet at 6 today.
    b) *John told Mary that he preferred to meet each other at 6 today.

On the basis of these examples Landau gives a summary of the key feature of partial control.

[1] Note that the grammaticality judgements Landau gives are in line with those of American English speakers. British English speakers tend to find 17. b) fully grammatical.

18. The PC-Generalization

    In tensed complements, PRO inherits phi-featuers from the controller, including semantic plurality, but not necessarily syntactic plurality.

This is accounted for by differences in Agree relations between the two cases. In both types of control an Agree relation is established between a functional head in the matrix clause and either PRO itself in cases of exhaustive control or T-Agr in cases of partial control. Which matrix head enters the agree relation depends on which matrix NP is the controller; T in cases of subject control or little v in cases of object control. There is also agreement between PRO and T in the embedded clause and between the relevant NP and functional head in the matrix clause.

Landau follows Rizzi (1997), among others, in assuming that the C head contains tense information which must be matched to the T head and, following Pesetsky and Torrego (2000) that this matching is done via head movement. In untensed clauses this movement does not take place, as it is blocked by economy. Landau's derivations are given below, where coindexing indicates Agree relations and F represents the relevant functional head in the matrix clause.

19. a) EC: $[...F_{2,3}\ ...DP_2\ ...[_{CP}\ [_{IP}\ PRO_3\ T\text{-}Agr_1\ [_{VP}\ t_{PRO1}\ ...]]]]$

    b) PC: $[...F_{2,3}\ ...DP_2\ ...[_{CP}\ T\text{-}Agr_3\ [_{IP}\ PRO\ t_{T\text{-}Agr1}\ [_{VP}\ t_{PRO1}\ ...]]]]$

The observed differences between exhaustive and partial control come down to the different $Agree_2$ relations in each case. In exhaustive control, F receives the controller's semantic number via $Agree_2$ and subsequently passes it on to PRO via $Agree_3$. In partial control, $Agree_3$ is between F and T-Agr. While this means that semantic plurality can still be passed onto PRO, Landau argues that, because [-SP] and [ØSP] are non-distinct, T-Agr remains inspecified for semantic plurality and PRO is free to be [+SP].

Although Landau gives a very detailed proposal of the mechanics by which control relations are established[2] he has little to say on the means of controller choice other than the suggestion that this may be due to semantic and/or pragmatic factors. Elsewhere, however, we do find more comprehensive proposals for the mechanisms of controller choice. These shall be summarised momentarily.

[2] Detailed though not necessarily accurate. Boeckx et al. 2010 raise several objections to Landau's approach, among them some inconsistencies in his use of the Agree relation.

2.1.4 Where from here?

As things stand it would appear that there is no satisfactory account of the distribution of PRO. Not only does the case assignment data given in the previous section seem fatal for an account based on case theory it also raises serious questions for the government and binding approach to PRO's distribution. In this framework case assignment takes place under government, yet the distributional theory relies crucially on PRO being ungoverned.

This sequence of failed attempts to capture PRO's distribution may drive us to consider the position that there is nothing occupying these apparently empty subject positions, or that they don't even exist at all. Such a move would not be unheard of yet it faces problems of its own. The (apparently all powerful) case data above poses problems here aswell; if there's nothing there what kind of nothing can bear standard case? Or for that matter, a thematic role?

It may become clear at this stage why so little shall be said here on the existence and nature of PRO. This area of control theory is much more opaque than the issue of controller choice on which we shall focus here and demands a great deal of further research.

2.2 Controller choice

2.2.1 The Movement Theory of Control

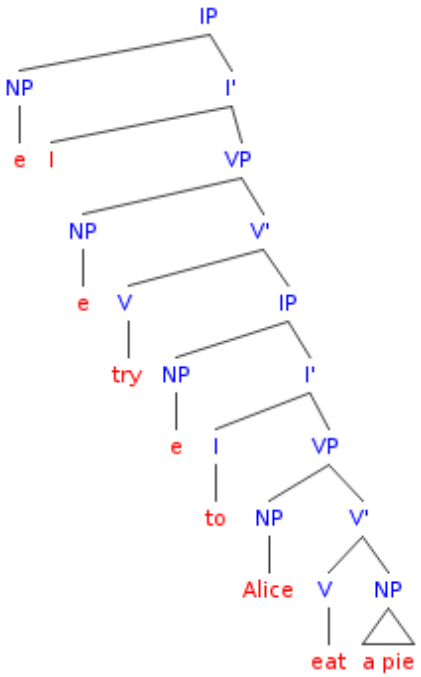
A significant departure from previous approaches, formulated in part to provide an alternative account of the distribution of PRO, came in with the movement theory of control (MTC) first proposed in Hornstein (1999) and later developed by Boeckx and Hornstein (2003, 2004). The main aim of the MTC is to simplify the grammar by reducing the number of empty categories; obligatory control as it is usually thought of does not exist under the MTC, but is rather a specific form of movement, thus dispensing with the need for PRO and leaving only NP trace. This step also dispenses with the need for a story of PRO's distribution; if PRO is in fact NP trace then its distribution is resticted to positions from which a-movement is possible.

Several changes are made to standard theoretical assumptions to make this theory possible. First, and most significant, is a reanalysis of theta theory in which theta roles are features on verbs and a

change to the theta criterion to the effect that individual NPs can bear more than one theta role. This allows NPs to move from one theta position to another.

Under Hornstein's analysis the derivation of *Alice tried to eat a pie* would proceed as illustrated below. It should be bourne in mind that Hornstein's proposal is developed in terms of the minimalist program, not government and binding theory. As such structure building is fed by movement and the deep structure type structure given below doesn't exist at any point. I give strutures of this kind solely as a means of exposition of the course of the derivation.

20.



We begin in the familiar way with *Alice* moving from specifier of VP to specifier of IP to check a D-feature. As the non-finite I cannot assign case *Alice* must move further. The next step however is for *Alice* to move to specifier position of the higher VP to check its external theta role. Following this we have a second instance of VP to IP movement and, following successful case assignment by the matrix I, the derivation converges.

2.2.1.1 Criticism of the MTC

This theory has not been without its critics. Culicover and Jackendoff (2001) find a number of empirical problems with the MTC. Among them is its inability to generalise to control in nominals. This is best demonstrated with control by morphologically derived adjectives.

21. An american attempt to invade Vietnam.

In examples such as this the controller, in this case *America*, is not syntactically realised in any form which would make it a viable controller. This raises serious problems for the MTC; either the kinds of movement involved allow a subject to move out of the syntax entirely or we must adjust our view of control such that adjectives are viable controllers. Indeed, Boeckx et al (2010) propose exactly this second solution. They argue that because *american* appears to be able to corefer with a pronoun and bind a reflexive, processes usually thought to require type identity, "there is no obvious reason why the same categorical laxity should not extend to movement." (p. 218)

22. a) Every American$_i$ military attempt at pacification in Iraq was a failure It$_i$ was finally forced to approach the UN.
    b) Every American$_i$ presentation of itself$_i$ in international venues is appalling.

Also among Culicover and Jackendoff's criticisms is the MTC's inability to predict the control behaviour of *promise* class verbs. This class of verbs is a long recognised argument against syntactocentric theories of control, this being no less true in the case of the MTC. Because controller selection takes place according to the MDP[3] we expect PRO in promise constructions to be controlled by the object and this is not the case.

Boeckx and Hornstein (2003) reject this criticism. They cite Chomsky (1969) in which it is shown that dative *promise* constructions are among the last constructions that children acquire. According to Boeckx and Hornstein this is the case precisely *because* they constitute an MDP violation. This sets a dangerous precedent however. If violation of the MDP in cases of *promise* only results in markedness, not ungrammaticality, why do we see similar violations resulting in ungrammaticality elsewhere? We find such violations crosslinguistically in dative raising constructions, such as the a) example below from Icelandic, and in English with superraising.

[3] Hornstein (1991) dispenses with the MDP, showing that the Minimal Link Condition can give the same coverage. However, as the output of the two is the same and as adopting Hornstein's view adds nothing else to our analysis I feel a full discussion of this issue is not needed here.

23. a) *Hesternir$_i$ virðast mér [t$_i$ vera seinir]
    the-horses(N) seem me(D) [t be slow]
    (Holmberg and Hróarsdóttir 2003)

    b) *John seems that it is certain _ to win.

In a) the dative argument intervenes between the site where *Hesternir* is merged in embedded subject position and the landing site of movement, resulting in ungrammaticality. In b) the raised subject skips the intermediate subject position which is subsequently filled by the explitive *it*, also creating ungrammaticality. The problem here is that if we apply the MDP to controller selection and treat it only as a markedness constraint then our explanation for these examples disappears. It is not possible for the MDP to be responsible for both the ungrammaticality of these examples and the markedness of dative *promise* constructions for some speakers.

Arguments in a similar vein are to be found in Beaven (2010). The data considered there show differences between raising and OC constructions with regard to dative intervention in Icelandic, and several Romance languages, among them Italian. In all cases the presence of an intervening dative argument results in ungrammaticality in the case of raising but does not in cases of OC.

24. Eg lofaði henni að fara.
    I promised her to go.

25. a) *Gianni sembra a Piero [t non fare il suo devere].
    Gianni seems to Piero not to do his duty.
    b) Brian ha promesso a Susan di lavare i piatti.
    Brian has promised Susan to wash the dishes.

The Icelandic example in 24 is paired with that in 23 a). In both Icelandic and Italian, there is a clear contrasts between raising and control; ungrammaticality in the case of the former, grammaticality in the case of the latter.

Although the MTC does not equate control with raising, the movement which crosses the intervener being I-to-V and I-to-I respectively, there is no immediately obvious reason for the behaviour of

dative interveners to be different in each case. Although there are ways round this for the MTC (it could be postulated that intervention does not occur in movement to theta assigning positions) any such explanation would be entirely post-hoc and would have to add stipulations to the grammar, damaging the minimalist legitimacy of the MTC.

Further criticism comes from Landau (2006), who raises a number of theoretical issues, questioning the minimalist validity of reanalysing theta roles as features. He observe that previously theta roles were a matter for the interface between syntax and semantics. By making them feature-like they become a part of the syntactic architecture, available throughout the derivation and dependant on other purely syntactic processes such as movement. Not only is this dubious in terms of plausability, it is also contrary to the MTC's minimalist ideals.

The MTC is still a subject of rigorous debate. The material presented here represents only the most crucial parts of the primary exchanges. Answers to many of these criticisms, and others, are presented Boeckx et al. 2010. I shall leave it to the interested reader to asssess the intricacies of the debate and make up their own mind on the state of play. For our purposes the criticisms discussed here are assumed to be nontrivial and, as of yet, not satisfactorily answered.

2.2.2 Semantic approaches to controller choice

The accounts of controller selection covered in this section are opposed to those earlier described in that it is the semantic role of the controller, rather than its syntactic position, which accounts for its control of PRO. Generally, semantic accounts of control (we shall consider mainly Chierchia 1989, Farkas 1988, Jackendoff and Culicover 2003 and Sag and Pollard 1991) all attempt to account for patterns of controller choice in essentially the same way though with variation in specific formalisations. The overall view is that control relations are the result of lexical properties of the verbs involved. Thus, verbs which demonstrate subject control do so because there is an aspect of their meaning which requires this to be the case.

For Jackendoff and Culicover (2003 and Culicover and Jackendoff 2006) and Sag and Pollard (1991) complement control verbs form different semantically delineated classes. Each of these display certain control properties, variously requiring their object, subject and complement of PP complement to be the controller, as represented here.

26. a) Sally told Matthew$_i$ _$_i$ to shut up.
    b) Sally$_i$ promised Matthew _$_i$ to shut up.
    c) Sally counted on Matthew$_i$ _$_i$ to shut up.

The basis of this theory is the observation that control properties are consistent across classes; all verbs of instruction show object control, whereas verbs of commitment show subject control, even in the presence of an object or PP complement.[4] Both sets of authors cited above are at pains to point out that this is not just a case of lexical stipulation. Rather, the control properties are a direct result of the semantic properties of the verbs in question.

> "We attribute this fact to the existence of a limited number of basic predicates that select actions as arguments; each of these can serve as a component in the meaning of verbs, nouns and/or adjectives. Crucially for our puposes, each basic predicate establishes a control relation – a type of semantic binding – between its action argument and one of its other arguments. The syntactic control behaviour exhibited by a particular word containing one of these basic predicates is then a consequence of how the arguments of the basic control predicate are mapped into syntax."
>
> (J&C 2003, 536)

Thus it would be impossible for a verb with the meaning of *order* to show the control properties of *promise*. Obviously, an approach like this dispenses with the need for any structure-based account of controller selection, such as the MDP. Indeed, object selecting subject control verbs are often taken as the first piece of evidence against such approaches, as in most versions of phrase structure *promise* verbs constitute MDP violations. However, see section 2.2.2.1 for an attempt to rescue the MDP in light of *promise*.

A semantic approach is also found in Farkas (1988). Her account relies on the notion of responsibility. This notion is a relation which holds between an individual(*i*) and a situation(*s*) "just in case *s* is the result of some act performed by *i* with the intention of bringing *s* about." (p. 36) For control verbs, the *RESP* relation is part of the satisfaction conditions of their related predicates, the argument of that predicate coindexed with *i* determining the controller. As with other semantic theories, Farkas maintains that controller choice here is not merely stipulative but is a result of the semantics of the verbs involved.

[4] Sag and Pollard characterise these categories as ORDER/PERMIT type, PROMISE type and WANT/EXPECT type verbs.

A slightly different approach is taken by Chierchia (1989). He proposes that, semantically at least, complement clauses represent properties which are arguments of the matrix predicate, not themselves fully formed propositional structures. As such, the notion of an unexpressed subject is not realised and must be accounted for in another way. Chierchia argues that this is done via lexical entailments; "...part of knowing what *try* means is to know that if I try to *P*, then I try to bring about a situation where I have property *P*." (p. 142)

Cheirchia's view of controller selection makes appeal to thematic roles, though with the caveat that traditional labels may be insufficient in capturing the relevant relations; "Perhaps notions such as "resposible for the outcome" are called for." (p. 143) Citing Jackendoff (1972) he notes that in general it is the theme argument which controls, or the agent or goal if a theme is absent, suggesting that an approach to controller choice according to a hierarchy of thematic roles may be the correct approach.

2.2.2.1 Saving the MDP

There have, however, been attempts to rescue the MDP, and the syntactic theories of control which rely on it, in light of *promise*. Larson (1991) makes use of his analysis of ditransitives (1988) to argue that, given a certain view of the structure of *promise*, the exceptional control behaviour is not exceptional after all. One piece of evidence he gives to support treating dative *promise* constructions and ditransitives similarly is their analogous behaviour with regard to extraction. Both resist extraction of the inner object while allowing extraction of the outer one.

27. a) What did John promise/give Mary?
    (Ans.: To leave before 5./A bag of cat litter.)
    b) i) ??Who do you think John gave a sports car?
    ii) ?? Who do you think John promised to fix the car?

As well as *promise*'s similarities to ditransitives Larson notes some of it disimilarities to other control verbs like *force* with regard to extraction. *Force* allows extraction of its of its NP object but resists extraction from the infinitive.

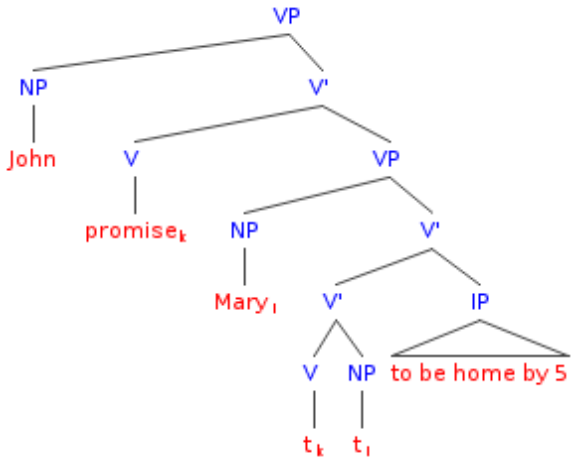
28. a) *What did John force Mary?

b) Who did John force to leave?

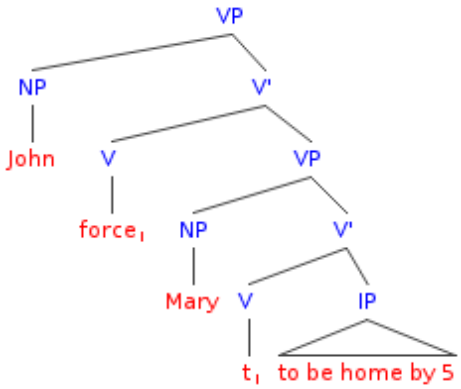
Treating dative *promise* as analogous to double obejcts, Larson assigns them the structure in 29.a), contrasting with that of *force* in 29.b). This analysis is an extension of Larson's 1988 view of the syntax of ditransitives, which will be discussed in the section on the ditransitive construction (surprisingly).

With *force* the c-command relations mirror the linear order of constituents, meaning the object c-commands the infinitive and as such controls PRO. However, with *promise*, because the deep structure position of *Mary* does not c-command the infinitival complement, and therefore PRO, it is not a legitimate controller, meaning subject control is actually the expected configuration.

29. a)



b)



Note however that although it is an attempt to validate syntactic theories of controller selection,

Larson's view of *promise* is incompatible with the most prominent current syntactic theory, the MTC. While this approach derives the desired results under government and binding theory it does not do so within the minimalist program. Movement of *Mary* in 29.a) is A-movement and as such its output feeds syntactic dependancies, of which, for Larson, control is an instance. Keeping in mind that deep structures do not feature in the minimalist programme, there is no stage of the derivation in which *John* c-commands PRO but *Mary* does not; *John* is only merged after *Mary* has moved. Therefore if we translate Larson's approach into current syntactic terms his structure actually fails to give the correct results.

2.3 Summary

Clearly, the debates over the correct approaches to the many faces of control are far from settled and far from simple. From the manner of controller selection, to the means by which PRO's distribution is to be accounted for and, for that matter, whether a formative such as PRO exists, there is debate in all areas. Even within the study of controller choice, where there is a clear bifurcation into syntactic and semantic based accounts, we do not find a single exponent of each approach; the same intuitions may be accounted for in different ways.

It is the aim of this dissertation to bring new data to bear upon these debates. Our main contribution shall be on the question of controller choice.

3. Data

There has been a tendancy in the development of theories of control to focus almost entirely on control into complements. The purpose of this dissertation is to examine the control data found in purpose clause adjuncts and, should none of the current theories of control be suitable for extension to this area, to formulate a theory of control on this basis. If possible we shall suggest ways in which current theories may be adapted to better deal with these facts.

This dissertation will not deal with all adjunct control but rather will focus exclusively on *to* infinitive adjuncts. These adjuncts bear the greatest similarity to control complements and are therefore the clearest basis on which to draw analogies with what are commonly considered the core instances of obligatory control; both are instances of *to* infinitive whose control properties appear to

be similar. We begin by introducing the major types of *to*-infinitive we shall be concerned with here and outlining some of their properties.

3.1 In Order Clauses

Following Jones (1991), among many others, *to* infinitive adjuncts shall be divided into three classes. Firstly we distinguish *in order* clauses from purpose clauses (IOC and PC respectively). The empirical differences motivating this distinction are the ability of IOCs to be preceded by *in order,* their rigid subject orientation and their inability to license object gaps.

1. Ishmael$_i$ went to the petrol station in order _$_i$ to buy flowers for his wife.
2. *Ezekiel$_i$ bought them$_k$ in order _$_i$ to put _$_k$ in the stew.
3. *Derek ordered Sara$_i$ a monkey in order _$_i$ to amuse herself.

1 demonstrates all these properties; the controller is both subject and agent and there is no object gap. The adjunct in 2 is a PC and therefore cannot be preceded by *in order* and 3 is ungrammatical due to the absence of subject control. In section 5 we shall see that the distinction between IOCs and PCs is to be explained in terms of differing attachment heights; unlike PCs, IOCs attach very high in the matrix clause, meaning the only argument which c-commands the adjunct is the subject. This means that only the subject is available to control the subject gap.

In addition to having a syntax distinct from that of purpose clauses, IOCs also have very specific semantics, always describing the intention of the main actor[5] in the matrix event. This leads to a restriction by which they can only attach to clauses in which the subject is an agent. We can further demonstrate this with examples in which the subject has been coerced into being non-agentive.

4. a) He pressed the light switch with his head in order _ to turn the light on.
   b) *He accidentally pressed the light switch with his head in order _ to turn the light on.

While the actor in a) is construed as being standardly agentive and therefore capable of controlling an IOC, the inclusion of *accidentally* in b) forces an interpretation in which the actor is non-

[5] As shall be discussed in section 3.1.1, there are instances of IOCs whose control properties deviate somewhat from the OC examples we are primarily concerned with here. In these instances *actor* is not an appropriate term. However, these instances are to be excluded from our analysis and as such *actor* is an appropriate label for all the cases we are concerned with.

agentive and therefore cannot control the IOC, causing ungrammaticality.[6]

Additionally, in instances where the agentivity of the controller is not clear on the basis of the matrix clause alone the IOC coerces a reading in which it is, as demonstrated by 5.

5. She$_i$ received it from him in order $\__i$ to maintain good relations.

Here we construe her receipt as being somehow agentive; a situation could be imagined in which the Queen's choice to accept or decline a gift from some foreign dignitary could have repurcussions for inter-country relations.

Examples like 5 provide justification for adopting Jackendoff's (1972 and subsequent work) division of thematic roles into two distinct tiers, one for movement and location and one for notions such as agent and patient; these are the thematic and action tiers respectively. It would be strange to deny that the subject in 5 is a recipient, yet the IOC shows that it is also interpreteted as an agent; postulating a division of theta roles along these lines allows us to account for this dual status.

3.1.1 Excluded IOCs

Coerced examples like 5 appear to mark the beginning of a cline away from standard cases of OC in IOCs, the continuation of which is shown in 6-8 below. The existence of these examples, in which the adjuncts are clearly IOCs, might lead us to question the validity of the generalisation that only agents control in these constructions. However, while the adjuncts are of the same type, the control in these examples differs sufficiently from that in the core data given previously, and is itself so poorly understood, that it would not be unreasonable for us to exclude them from our analysis.

In the instances of control we are concerned with we have syntactically realised arguments acting as controllers in every instance. In the examples below, not only do we have a controller which is not a syntactically realised argument, we also have syntactically realised arguments which are not controllers, despite meeting all of William's structural criteria.[7] Thus there is something about these

[6] For some speakers there is a reading on which 4. b) is grammatical. In this reading *pressed the light switch* is intentional, licensing the IOC, while *accidentally* only takes scope over *with his head*; he meant to turn the light on but with his elbow, not his head. This reading demonstrates that it is the semantic incompatibility of the *accidentally* with the IOC which causes ungrammaticality in the ungrammatical reading.

[7] With the exception of unique determination. This is hardly surprising; the point is that these arguments are not determined as the controller at all.

configurations which prevents control relations being established in the manner which the examples above would lead us to expect. It is clear therefore that the control relations which do exist are established according to a mechanism distinct from the OC mechanism responsible for our earlier examples.

6. The ship was sunk _ to collect the insurance.
7. The ship was sunk _ to further the plot.
8. Grass is green _ to promote photosynthesis.

In 6 it is fairly simple to apply a reading in which the person directly responsible for sinking the ship is also directly responsible for collecting the insurance, leading us perhaps to suggest that it is the implicit agent which is the controller. In 7 however this is not the case. The only reading which makes sense of 7 is one in which a playwrite seeks to further the plot by having a character sink a ship. Thus the only semantically plausible antecedent has no place in the matrix clause (any implicit agent slot being filled by sinker of the ship).

Further evidence against positing an implicit agent as controller comes from examples like 9 a).

9. a) *The ship was sunk _ to become a hero.
   b) John sank the ship _ to become a hero.

If implicit agents are allowed to control then there is nothing stopping a) from being grammatical. Given the grammaticality of b) we can conclude that conceptually there is nothing wrong with a) yet, even with the correct background in place, a) cannot be grammatical.

10. Throughout WW2 John yearned for the affection of the folks back home and when he found the unattended U-boat he knew his time had come. *The ship was sunk _ to become a hero.

Lasnik(1988) argues that the controller in instances such as these is in fact the the matrix clause itself, rather than any argument of it. Thus the ungrammaticality of 9 a) is ruled out as the matrix event is not capable of becoming a hero. It also allows us to account for 8. As a state this can have no agent, the best we could do being an appeal to some higher power (evolution, God...) under whose impetus this state comes to be true.

However, applying this to all of 6-8 above shows that this is still not quite right. 7 is well accounted for (a ship sinking can further a plot) but 6 is not (sinking a ship cannot collect insurance). While Lasnik's approach may well be on the right track, there is still work to be done here. Thus, in addition to not being the kind of control we are interested in, it would appear that for what is only a small corner of the control picture this is an area of fiendish complexity and as such we shall not attempt to give an account of it here. Good luck to anyone who does.

3.2 Purpose Clauses

As lovely as IOCs are, they are not all that interesting as far as OC is concerned, their syntax and semantics restricting them to a single control configuration. As such, the main focus of this dissertation will be on PCs. These come in two flavours; those which have a gap only in subject positions (subject gap purpose clauses; SPCs) and those with a gap in both subject and object position[8] (object gap purpose clauses; OPCs), a) and b) below respectively.

11. a) Sally brought Bill _ to talk to the kids.
    b) Sally brought Bill _ to talk to _.

At first glance it may appear that an entirely structural story of control is possible here. If gaps seek controllers sequentially from the bottom up then the correct control patterns are predicted; *Bill* controls the subject gap in a) because it is the closest possible antecedant and *Sally* controls the subject gap in b) because *Bill* has already been chosen as controller of the object gap and is therefore no longer a possible controller.

This analysis could be maintained when we turn our attention to the area which is to form the main focus of this paper, purpose clauses from matrix ditransitives.

12. She gave him it _ to play with _.

Although the syntactic positions of the controllers are different from those in monotransitives, we still see the lowest argument controlling the lowest gap and the second lowest argument controlling

[8] This is actually inaccurate. Often the second gap in OPCs is in an adjunct attached to the OPC.
1. Bill bought a spoon _ to eat his cereal with _.
However, other than their position there appears to be no difference between gaps in object position and gaps in adjuncts; they are both obligatorily controlled and are subject to the same restrictions on controller choice. Because of this, and in the interests of simplicity, they shall both be referred to as object gaps.

the second lowest gap. We can extend this even further if we look at passivised OPCs with ditransitive matrix clauses.

13. She gave him it _ to be drunk at the party.

As the only gap is now in subject position, it selects the lowest matrix argument, the theme, as its controller.

However, if the dative double object analogues to the ditransitives shown above are taken into account a pure locality based approach to controller selection starts to look shakey.

14. a) She gave it to him_ to play with _.
    b) She gave it to him _ to be drunk at the party .

In terms of surface positions of gaps and arguments, we find that rather than the crossed dependancies that the theory outlined above would lead us to expect, the theme, which is now to the left of the recipient, still controls the object gap and the recipient still controls the subject gap. In the face of this, the only way to redeem the locality based account is to propose that the dative double object and ditransitive constructions are transformationally related, the former being derived from the latter, and that control relations are established before this transformation takes place. While this is certainly not an unheard of position to take, it is not one we shall adopt here. Section 4 will outline the motivation behind our view of the two parts of the dative alternation; that they are structurally similar but not transformationally related.

As mentioned previously, the primary dichotomy in accounts for controller selection in OC is between syntactically based and semantically based approaches. On the basis of the above, our first prediction would be that a semantic approach is the correct way to tackle control in purpose clauses.

3.2.1 Red herring

One area which may seem an intuitive place to look for answers to the syntax vs. semantics debate is verb pairings in which the arguments alternate their positions such as *fear* and *frighten*; the theme, *rabbits*, is in object position in a) and subject position in b).

15. a) Wolves frighten rabbits.
    b) Rabbits fear wolves.

The expectation here would be that if controller choice is determined syntactically then the controllers will occupy the same syntactic positions in both cases. If it is determined thematically then the thematic role of the controllers will be consistent.

Unfortunately, this seemingly fertile hunting ground for answers to the control conundrum turns out to be a dead end as it would not appear to be possible to construct examples featuring matrix clauses with these verbs and purpose clauses.

16. a) *Wolves$_i$ frighted rabbits$_k$ _$_i$ to protect _$_k$.
    b) *Rabbits$_k$ fear wolves$_i$ _$_k$ to protect _$_k$.

16 a) may be ruled out in terms of a semantic clash; the wolves do not seek to frighten the rabbits[9], therefore this state of affairs cannot be purposeful and as such cannot license any kind of purpose clause. In the second example we find a situation in which the rabbits must control 2 different gaps.

Given that the impossibility of these constructions is due to the incompatibility of the matrix predicate with a purpose clause, rather than any problem with the control configurations themselves, we cannot apply any findings from this area to control. As such, although they may be of use in determining the distribution of purpose clauses, they cannot inform a theory of controller choice.

3.3 Purpose clause control is obligatory

If we wish to bring our findings from purpose clause control to bear on how we formulate a wider theory of control we must make it clear that they are in fact the same phenomenon. I shall do this using the properties of obligatory control put forward by Williams (1980). These properties have been adopted elsewhere (e.g. Hornstein 1999) and can be taken as representing at least the gist of the criteria which others adopt.

[9] It is of course possible to construct examples where wolves do intend to frighten rabbits. We may allow ourselves to imagine wolves cutting eye holes in sheets in order to convince the rabbits that they are ghosts. However, this sense of *frighten* is not the one involved in the semantically neutral alternation with *fear.*

17. a) Lexical NP cannot appear in the position of PRO.
    b) The antecedent precedes the controlled PRO.
    c) The antecedent c-commands the controlled PRO.
    d) The antecedent is thematically or grammatically uniquely determined.
    e) There must be an antecedent.

(Williams 1980, 209)

Where IOCs are concerned, these are all clearly met.

18. Colin$_i$'s sister$_k$ coughed in order *Colin's sister/_$_{k/*i/*gen}$ to clear his/her throat.

This shows that both the gap in subject position and the antecedent are obligatory and that the subject gap is controlled by a preceeding, c-commanding antecedent; *Colin* is not a viable controller because it does not c-command the subject gap. Unfortunately, the syntax of IOCs, to be discussed in section 5, mean that is not possible to construct examples in which there is more than one possible controller and there is therefore no way to demonstrate the unique determination which characterises OC. This should not be taken to imply that this characteristic does not exist in IOCs, merely that other factors make it undetectable. For slightly different OC criteria, and further demonstration that IOC control fulfills them, see Boeckx et al (2010).

Unfortunately Boeckx et al. do not give the same attention to control in PCs so it falls to us to do so. Though rarely if ever fully spelt out, work on purpose clause control often implicitly, or explicitly in the case of Jones (1985), assumes that the control relations found there, involving both subject and object gaps, are obligatory.

The first of Williams' criteria, that a lexical NP cannot appear in the position of PRO, is not immediately clear in purpose clauses, particularly those with object gaps. However, as Jones (1985) discusses, there are differences in the distribution of OPCs and SPCs[10]; although we find purpose clauses with lexical NP objects and purpose clauses with gaps in object position, the two are never semantic equivalents, thus there is no alternation between the two. That is, in contexts where we expect an object gap, we find an object gap.

[10] There is overlap between these two classes, for example *bring*.
1. Bill brought Sally to talk to.
2. Bill Brought Sally to talk to the kids.
We will show in section 6.3.2 why this is the case and why it is not damaging to our analysis.

19. a) Bill bought carrots _ to eat _.
    b) *Bill bought carrots _ to eat them.

The constraints on order and c-command are both met by purpose clauses; due to the nature of their adjunction purpose clauses necessarily follow their antecedents.

20. *_ To eat _, Bill bought carrots.

It is also the case, given the theories of ditransitive syntax and adjunction to be developed here, that the antecedent always c-commands its gap. Indeed, this requirement for c-command in adjunct control provides a partial explanation for the obligatorily subject oriented nature of in order clauses; only the subject is high enough in the phrase structure to c-command the gap in the IOC.

21. a) *Bill$_i$'s flatmate bought them $_i$ to drink _.
    b) *He brought Bill$_i$'s flatmate _ to talk to $_i$.

The cases of control we shall be considering here all require an antecedent. Though most work on control acknowledges the existence of control by implicit arguments, this is widely thought to be distinct from obligatory control by a syntactically overt antecedent and we shall have little to say on the status of this phenomenon in purpose clauses.

It is also the case that controllers of both subject and object gaps in PC control are always uniquely determined; in every instance there is only one possible choice of controller per gap. For example, in 19.a) above it is by necessity that *Bill* controls the subject gap and *carrots* controls the object gap. While it might be postulated that this configuration is chosen because it is somewhat more plausible, though significantly less fun, than the alternative, we can illustrate with further examples that potential actorhood in purpose clauses is determined grammatically rather than referentially.

22. a) Hermes gave Hades Poseidon _ to talk to _.
    b) Theseus brought Heracles _ to talk to the children.

In a) there is no non-grammtical reason to think that Hades talks to Poseidon rather than Poseidon talking to Hades, yet Hades must control the subject gap. Similarly in b), Theseus and Heracles both

presumably have the capacity to talk to the children yet some aspect of the grammar allows only Heracles to fill this role.

Given the similarities we have observed here between control in complements and control in purpose clauses we propose that they are two instances of the same phenomenon. As such, whatever is to be learned about the mechanisms of this unique determination on the basis of purpose clauses can by analogy be applied to complement control. The basis of this determination, whether it is syntactic or semantic/thematic, has been the central aspect of the debate over control for the last fourty years and it shall be our main concern here.

Of course, in stating that subject and object gaps are controlled in the same way opens up the question of what the differences between the two really are. The findings put forward here do not, I believe, motivate any distinction on the basis of control; the differences we observe are to be explained by general differences between subject and object positions in general, not differences between the null NPs which may occupy the relevant gaps in purpose clauses. Many theories of control claim that PRO only appears in the specifier position of IP, thus forcing a distinction. However, this appears to be little more than a constraint forced by theory internal constraints within government and binding theory and without further justification cannot be maintained.

The similarities between obligatory control in complements and control in purpose clauses, both of subject and object gaps, shown here are sufficient to justify considering them examples of the same phenomenon. In each case a null NP takes as its antecedent a single overt c-commanding NP.

3.4 On gaps

At this stage a few observations are in order regarding gaps.

First, we find that the number of gaps in a purpose clause is always equal to either the number of internal arguments or the number of total arguments of the matrix verb. This means that we never see SPCs attached to ditransitives (a)) or OPCs attached to intransitive matrix clauses. (b))

23. a) *John sent him it _ to reach the tin on the shelf.
    b) *Allison jumped _ to reach _.
    c) She gave him it _ to be drunk at the party.

We do see apparent counter examples to this as in 23 c) above. However, we observe that instances like these feature passives in the adjunct clause. If we accept a theory of passives in which the passive morphology itself bears a theta-role we may be lead towards an explanation of this behaviour in thematic terms. Essentially, the predicates which appear to be exceptional actually select the relevant number of arguments, it is just the case that in the cases discussed here they appear in syntactic constructions which do not realise all these arguments.

Secondly, it is impossible for an adjunct to contain more than 2 gaps. This is shown by constructing matrix clauses with 3 syntactically realised NPs and attempting to have them control 3 gaps in an adjunct.

24. *John$_i$ received Bill's tyres$_k$ from Bill$_x$ _$_i$ to give _$_k$ back to _$_x$ after his holiday.

Each indexed pair is consistent in terms of referential identity and the positions of the gaps in the purpose clause are all attested elsewhere, as the following examples demonstrate.

25. a) John gave him it _ to give _ to Bill.
    b) John sent him Bill _ to give the tyres to _.

In a) we find a gap in the theme/direct object position whereas in b) the gap is in recipient/indirect object position. Yet these two gaps cannot appear simultaneously.

An off the shelf explanation of this is available in Chomsky (1986). There Chomsky maintains that object gaps are filled by null-operators which undergo movement to the specifier of CP. If we accept Chomsky's view that there can only be one null-operator per clause and also the view that the subject gap is filled by PRO which can only appear in the specifier of IP, and as such is limited to one per clause, then we have an explanation for the observed two gap limit.

As the exact syntactic nature of gaps will not be of great concern here I will have little to say on the accuracy of these claims. However, the theory of controller choice to be developed here may offer an alternative explanation based in the semantics of control. This explanation will be laid out in section 6.3.4. I shall leave it up to the reader to decide if these two explanations are incompatible.

These observations, to the effect that purpose clause gap configurations are in some way dependant on the matrix clause to which they attach, hint that purpose clauses are not merely syntactic bolt ons but are sensitive to the material they modify. This leads us to expect explanations for these observations to come from certain areas; if purpose clauses with two gaps, for example, are only permissable with matrix clauses of a certain semantic type then it is unlikely that this is to be explained in technical syntactic terms, as the potential explanation from Chomsky above might suggest. Rather, these observations are another indicator that purpose clause control is to be looked at in semantic terms

3.5 Summary

This section has outlined the material which shall be considered relevant in constructing our theory of control. The primary focus will be on SPCs and OPCs, the restricted syntax and semantics of IOCs offering little in the way of analysable variation. We shall take as our starting point OPCs attached to ditransitive and dative double object matrix clauses. As such the following two sections will respectively outline the view of ditransitives and adjunction which we adopt here.

4. The Structure of Ditransitives

Given that our aim here is to construct a theory of control on the basis of infinitival adjuncts on ditransitives it is important that our view of the structure of ditransitives is made clear. This section shall consider not only the structure of the ditransitive construction but also the status of the dative alternation. Our conclusions will be that ditransitive and dative constructions share a right branching structure containing multiple VP-shells, the lower of which specifies a result state, but that the two constructions are not transformationally related.

The majority of recent syntactic work on the ditransitive construction has followed that of Larson (1988) and it is a version of this work, modified in light of criticism from Jackendoff (1990), the earlier findings of Oehrle (1976) and the work of Beck and Johnson (2004), that will be taken here. This section shall outline Larson's motivation in developing his structure, some arguments against it (primarily those of Jackendoff 1990) and a review of some more recent work providing further evidence for, and in some cases building on, Larson's analysis.

Larson takes as his starting point the asymmetries of anaphora binding found in the double object construction, noted by Barss and Lasnik (1986). Giving the examples below, they observe that in the ditransitive construction the first object NP can bind the second but not vice versa.

1. a) I showed John himself in the mirror.
   b) *I showed himself John in the mirror.

The grammaticality of a) shows that *himself* is bound by *John*, satisfying condition A of the binding theory. b) on the other hand violates both conditions A and C of the binding theory; *himself* does not have a local antecedent whereas *John* does. The condition A contrast is mirrored in the examples in 2.

2. a) I showed the professors each other's students.
   b) *I showed each other's students the professors.

Given standard views of binding this means that the first NP must asymmetrically c-command the second. As Larson notes, neither of the structures for the double object construction most commonly postulated before his work allow for this. In a) NP1 c-commands NP2 but NP2 also c-commands NP1. In b) NP1 is c-commanded by NP2 and does not c-command NP2.

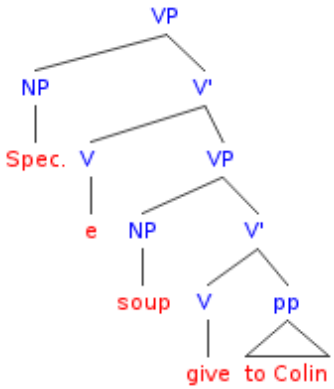
3. a) b)

The solution which Larson puts forward treats ditransitive constructions and dative constructions as transformationally related, the initial structure of the inner VP of both being made up of multiple VP shells as shown in 4.

The process required to transform this into a construction with two NP objects is essentially one of passivisation within the verb phrase. Larson's view is that internal VPs are clauselike, in that the theme *soup* and the goal *Colin* are essentially in subject and object position. It is further assumed

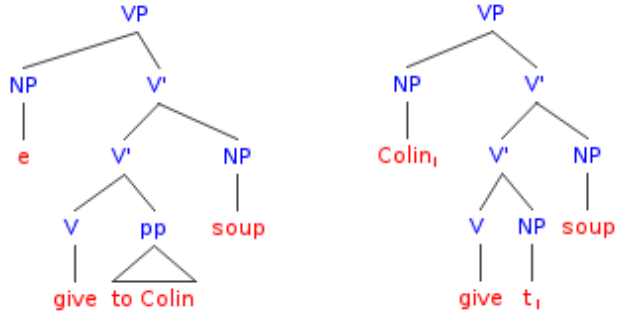
that the preposition *to* performs the function of pure dative case marking, similar to the morphology found on indirect objects in more highly inflecting languages. Allowing for these assumptions we may postulate that the same processes and effects found in passivisation can be found in the inner VP; suppression of the theta-role in subject position and withholding of case from object position (Larson adopts the term dative shift for VP internal passivisation).

4.



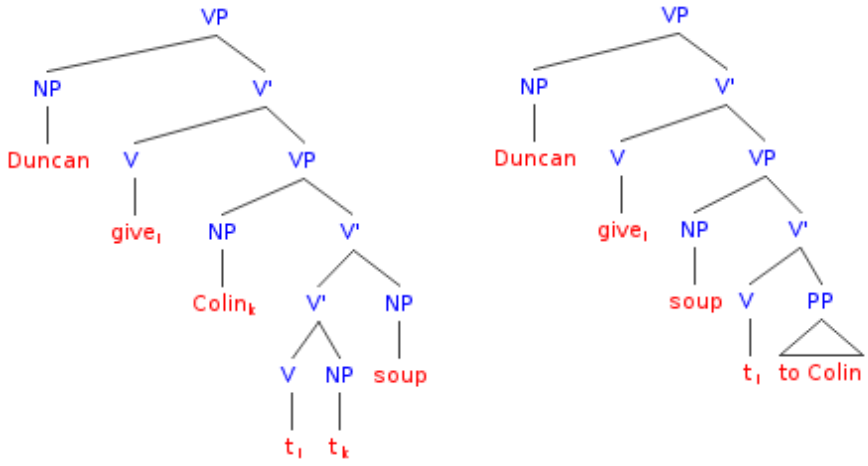
Similarly to passivisation, the subject position is athematic, leading *soup* to be realised in an adjoined position (5.a)) and leaving the subject position empty. *Colin*, having had its case blocked by dative shift (essentially absorption of *to*) undergoes NP movement to the empty, athematic subject position. (5.b))

5. a) b)



Following this *give* raises to the higher vacant V slot where it can assign case rightward to *Colin* and the theta-theory is satisfied with the merging of *Duncan* in the specifier of VP slot, saturating the agent role. 6. a) shows the completed VP structure of the ditransitive, b) the completed VP structure of the dative.

6. a) b)



There are three aspects to this approach which we will consider; the right branching, multiple VP shell structure, the claim that the two constructions are transformationally related and the presence of verb movement as part of the derivation.

The last of these is something which has been largely superseded in subsequent work on ditransitives, often replaced by an analysis in which the lower VP is a small clause denoting some relation, canonically a HAVE relation, which holds between the two objects.[11] Such a view is found in Beck and Johnson (2004). In their attempt to account for the two possible readings of *again*, the repetitive and the restitutive readings, they cite differences in attachment height as responsible for *again* taking scope over either the entire clause or only the lower VP.

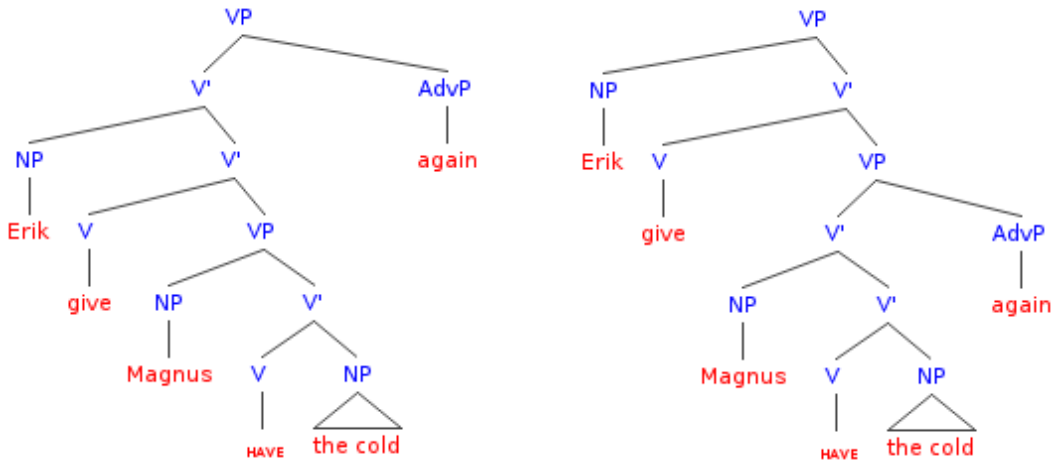
7. Erik gave Magnus the cold again.
8. a) Erik gave Magnus the cold, and he had done so before.
   b) Erik gave Magnus the cold, and Magnus had had the cold before.

In the repetitive reading, illustrated by 8.a), *again* takes scope over the entire event whereas in the repetitive reading it takes scope only over the result state. Beck and Johnson's explanation of this is that the semantic decomposition of 7 is represented in the syntax and that the differences in scope are the product of different adjunction heights of *again*. On the repetitive reading *again* is attached

[11] It is not necessarily the case that a decompositional view of the VP shells in ditransitive structures equates with an absence of movement. It is still possible that movement may exist in these constructions under the guise of incorporation of the various parts of a verbs decomposition to give the verb's meaning. For example, incorporation of HAVE into CAUSE yielding *give*.

as an AdvP adjunct to the upper VP, whereas on restitutive readings it attaches to the lower VP. These are represented in 9 a) and b) respectively.

9. a) b)



10. a) Pedro sent Juan a letter again.
    b) Pedro sent a letter to Juan again.

Without this syntactic realisation of the semantic decomposition Beck and Johnson's attachment height proposal would fail to offer any explanation.

Beck and Johnson's methodology also provides a way of formalising some of the subtle semantic differences between the ditransitive and the dative constructions; dative constructions do not uniformally include HAVE. Consider the different restitutive readings in 10. a) and b).

In a) but not in b) it is the case that Juan received the letter. On Beck and Johnson's account this is because the dative, while still containing a small clause, does not universally feature HAVE as its result state. Considering different classes of dative, Beck and Johnson demonstrate the variety of small clauses which restitutive readings of *again* show are available.

11. give

a)Thilo gave the map to Satoshi again.

- Satoshi HAVE the map.

benefactives

b) Thilo sewed a flag for Satoshi again.

- EXIST a flag.

verbs of motion

c) Thilo sent the plane to New York again.

- the plane AT New York.

This is an area of Beck and Johnson's argument which we find convincing, although the exact predicates given for the dative construction small clauses are not entirely correct. As shall be made clear by the consideration of the control data in section 6, the small clause complements of three argument verbs are necessarily headed by two place predicates, thus the EXIST clause in 11.b) is insufficient; the flag's existence is intended to benefit Satoshi.

The absence of these result states is in part the difference between dative double objects and superficially similar examples with an object and a PP adjunct.

12. Sandra sent a letter to France.

We may have one reading of 12 in which *France* refers to a person, the dative double object, and one reading in which *France* refers to France and is the complement of a PP adjunct headed by *to*. In the former *France* is a recipient, whereas in the latter *France* is merely an endpoint of motion. The differt interpretation of *France* in each case leads to different result states; when *France* is an argument the letter ends up in someone's possession, when it is an adjunct the letter is merely the theme of caused motion. We shall have more to say later on the nature of these result states and the ways in which they are relevant for control.

We are given further reason to doubt Larson's use of the dative alternation by Jackendoff (1990), who takes issue with Larson's notion of dative shift, particularly its application in the various cases of verbs which show argument alternations. Jackendoff observes that for Larson all pairs of alternating argument realisations must be transformationally derived due to his assumption of the *Uniformity of Theta-Assignment Hypothesis* (UTAH, Baker 1988), which states that identical thematic relations are represented by identical deep structures. He then points out inconsistencies in the manner of case marking in Larson's analysis of these structures; when *send* undergoes dative shift, its object is assigned case by V', but when the object of *supply* is demoted to an adjunct the preposition *with* must be introduced in order to assign case.

Jackendoff further argues against relating alternating argument structures to similar deep structures on the basis that the identical thematic relations on the basis of which UTAH stipulates these structures does not actually exist. This may be demonstrated using verbs of caused motion such as *kick*, *throw* or *send*.

13. a) Gertrude sends Heinrich cabbages.
    b) Gertrude sends cabbages to Heinrich.

While in the ditransitive the indirect object is obligatorily marked with the recipient theta role, in the dative construction this is only optionally assigned by the preposition. Jackendoff draws a parallel between these indirect objects and those of verbs such as *sing* and *peel*, in that neither are essential parts of the verb's meaning. Taking on board the semantic differences between the two constructions in these instances it would seem odd to maintain that the two are transformationally related. Indeed, the only cases where it seems this view of dative shift can be maintained are a very restricted set of purely possessional *to* datives; if UTAH is to be maintained then only pairs of examples in which semantic equivalence is found can be transformationally related and only a very small number of ditransitive and dative pairs show this kind of semantic equivalence.

Further arguments against an approach which relates the two constructions via syntactic transformations, though not relating specifically to Larson's structures, are found in Oehrle 1976. He argues that the ability of both transformational and lexical theories to account for much similar data in similar ways means that the problem is one of appropriateness, no feasibility. While he notes that no single piece of data proves conclusive for either theory he argues that there are many "slender pieces of evidence" which indicate that lexical specification of two distinct constructions is the correct choice. One of these slender pieces relates to the semantic differences between dative and ditransitives instantiations of the same verb.

Oehrle observes that these differences would appear to be idiosyncratic and that in both lexical redundancy and transformational approaches this information must be specified on the lexical entries of the relevant verbs. This is problematic for a transformational approach; the information stored in the lexicon comes close to reduplicating the information stored there on a lexical approach, yet a phrase structure rule is additionally postulated. Thus the transformational rule itself is essentially redundant.

A further indication that a lexical theory is preferable is that verbs which occur in both dative and ditransitives constructions can develop senses which are only available in the ditransitive. This can be illustrated by the availability of abstract subjects.

14. a) The victory got Ali a shot at the title.
    b)*The victory got a shot at the title for Ali.

(Oehrle's 7, section III 4.3.2)

Given that such selectional restrictions on insertion are specified in the lexicon, a theory based on phrase structure transformation does not seem to be as well placed to account for this as a lexical theory.

The observed differences between the two constructions lead us to conclude that it is not possible to maintain a theory which involves both derivation of one construction from the other and U.T.A.H.. In this respect then we shall follow Jackendoff and Oehrle in assuming the position that the ditransitive and dative constructions represent two distinct base generations.

On the issue of the right branching structure however, we find Jackendoff's criticisms to be less well founded. His primary argument rests on the fact that the binding asymmetries observed by Barss and Lasnik are not exclusive to ditransitives but appear across double complement domains, not just for anaphors but for all binding phenomena. Reproducing Jackendoff's four pages of data here would be slightly less than economical, so I shall illustrate using his paradigm of double PPs within nominals with respect to quantificational NP bound pronouns.

15. a) the gift from every girl_i to her_i mom.
    b) *the gift from her_i daughter to every mom_i.
    c) the gift to every mom_i from her_i daughter.
    d) *the gift to her_i mom from every girl_i.

In Jackendoff's view of phrase structure the PPs in the above examples act to prevent their NP complements from c-commanding each other. These findings mirror those of Barss and Lasnik; the first NP may bind the second but not the other way round. This pattern is repeated throughout Jackendoff's extensive data, something he takes to signify that modifying the theory of binding to take account of linear order, rather than modifying phrase structure to show asymmetric c-

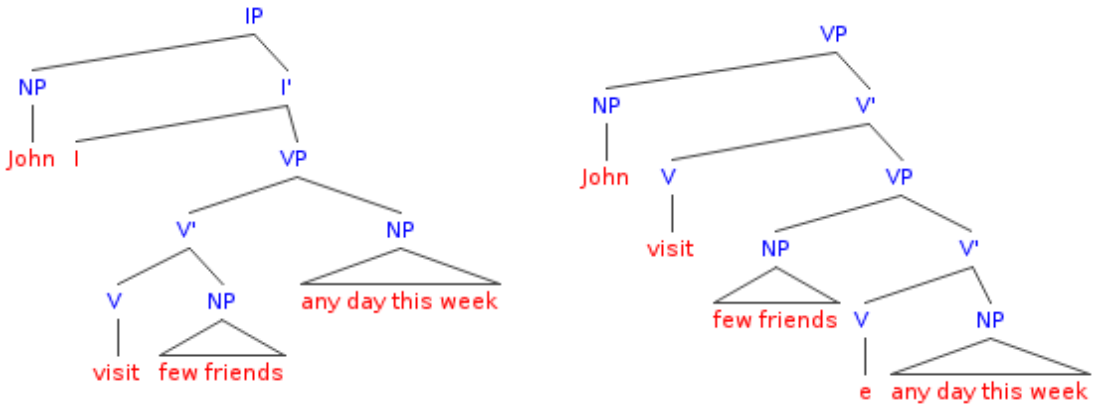
command, is the correct approach.

However, Larson (1990, p. 591) maintains that these patterns can be adequately explained by the right branching structure put forth in Larson (1988):

"In that analysis. . .elements appearing on the right – including obliques - are typically *lower* in the phrase marker than elements to their left. As a consequence, dependencies that superficially appear to be linear will also be describable in simple hierarchical terms"

As an illustration of this Larson gives the traditional structure and the right branching structure of 16 (Larson's 1), featuring a negative polarity item and its trigger.

16. John visited few friends any day this week.
17. a) b)

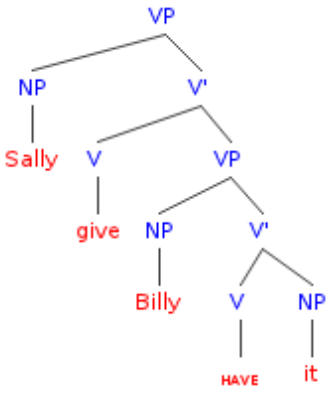


Larson notes that licensing in the traditional a) structure would require both m-command and an appeal to linear precedence whereas the right branching b) structure can account for licensing solely in terms of c-command. Thus assuming Larson's (1988) view of phrase structure extends the right branching analysis to all double complement domains provides an explanation of Jackendoff's data.

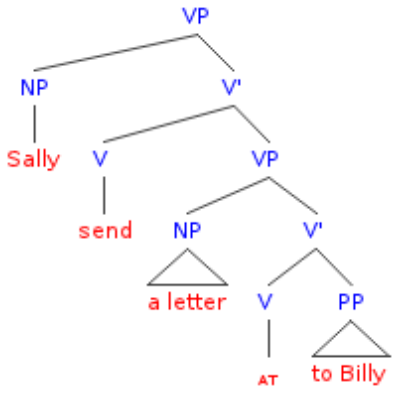
Taking all the above material into account, the view we shall take of the ditransitive and dative construction will be as follows; although the two constructions are not transformationally derived (Beck and Johnson 2004, Jackendoff 1990, Oehrle 1976) they share the right branching multiple VP shell structure set out in Larson (1988) and widely adopted elsewhere. Following Beck and Johnson (2004) (see also Aoun and Li 1989) we shall take the view that the multiple VP shell nature of these constructions reflects the presence of syntactically realised semantic decomposition. However, as

this is somewhat tangential to the main thrust of this dissertation, and a considerable topic in its own right, the exact nature of this decomposition will remain somewhat vague. In the interests of concreteness these are the structures which will be assumed for the ditransitive and dative constructions respectively.

18. a)



b)



The most important aspects of these structures are their right branching nature, which will be put to use in ensuring the correct c-command relations are realised with regard to purpose clauses, and the asymmetry in the lower VP result states. As Beck and Johnson (2004) point out, different instances of these constructions may contain different result state relations, certainly not limited to those shown above, yet we build on this by claiming that these result states always specify an asymmetric relationship between the two objects. This will be demonstrated when we combine the above structures with the control data to be considered.

5. Adjunction

The next piece of syntactic architecture which we must give a clear account of is adjunction. This discussion will draw on the conclusions of the previous section on the structure of ditransitives and datives and will make reference to the data set out in section 3.

The conclusions in this section with regard to sites of adjunction are in line with those of Jones (1991) while the discussion of mechanics shall largely be a comparison of the relative merits of the proposals of Larson (1988, citing McConnell-Ginet 1982) and an adaptation of the complex predicate view put forward in Neeleman (1994).

We follow Jones (1991) in assuming that the empirical differences between *in order* clauses and purpose clauses are sufficient to warrant some structural distinction between the two. Consider first IOCs.

1. a) Ishmael$_i$ went to the petrol station in order _$_i$ to buy flowers for his wife.
   b) *Derek ordered Sara$_i$ a monkey in order _$_i$ to amuse herself.
   c) *Tim$_k$ bought a cake$_i$ in order _$_k$ to eat _$_i$.

The a) and b) examples in 1 show that only the subject of the matrix clause may control the subject gap. c) demonstrates the unavailability of object gaps in IOCs.

2. a) She$_i$ received it$_k$ from him _$_i$ to put _$_k$ on the mantelpiece.
   b) She gave him$_i$ it$_k$ _$_i$ to wash himself with _$_k$.
   c) She gave him it$_i$ _$_i$ to be drunk at the party.

2 shows that in a PC all of the matrix arguments are potential controllers of the subject gap and that object gaps are available.

As was shown in section 3.3, control in purpose clauses is a case of obligatory control and as such it is a requirement that any gap is c-commanded by its controller. With this in mind, we can deduce from the data in 1 and 2 that there are two possible attachment heights for purpose clause adjuncts; one fairly high in the structure, the IOC, the other very (maximally) low in the structure, OPCs and SPCs. The former attaches above the verb's internal arguments, preventing either of them from controlling the subject gap, whereas the latter attaches low enough to be c-commanded by them both, allowing control relations to be established. Corroboration for this distinction is found in the ordering of IOCs and PCs in contexts in which they both appear.

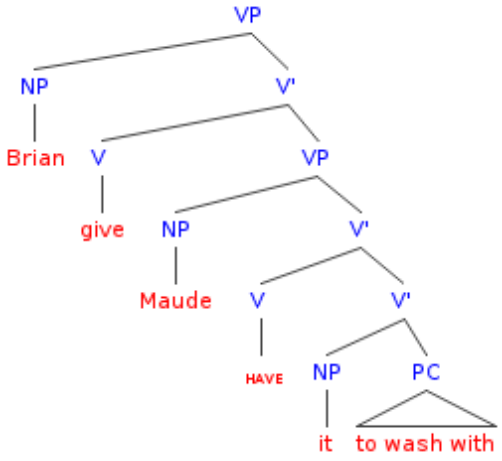
3. a) Marc brought Fido [_ to play with _][in order _ to please Anita].
   b) *Marc brough Fido [in order _ to please Anita] [_ to play with _].

None of this makes it entirely clear what the adjunction site of IOCs is. Given the above it is both theoretically and empirically possible that they could be adjuncts on either VP or IP. Unfortunately for the time being there does not appear to be any test for the distinction between the two. For the sake of exposition, it shall be assumed that IOCs are adjuncts on the upper VP. As far as our work

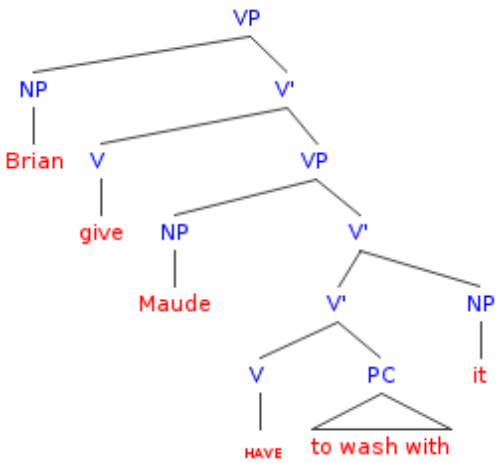
here is concerned this appears to a decision of no consequence. Should subsequent work show this position to be incorrect, that IOCs attach as adjuncts of IP, we do not believe that this would negatively effect our analysis of control.

Having accounted for the distribution of purpose clause adjuncts we move on to reviewing the mechanical possibilities. The main criterion that any theory we adopt must meet is that it must allow us to adjoin phrases at the very bottom of the structure, permitting the c-command relations outlined above. Unfortunately, there is no way of simply adding in the additional material which adheres to the rules of phrase structure, produces the correct linear order *and* allows the observed c-command relations. In 4. a) the lowest V' does not dominate V and b)'s obedience of phrase structure and c-command requirements leads to the generation of an incorrect ordering of constituents. Finally in c) the complement of the lower VP does not c-command the PC, failing to account for this object's ability to control both subject and object gaps.

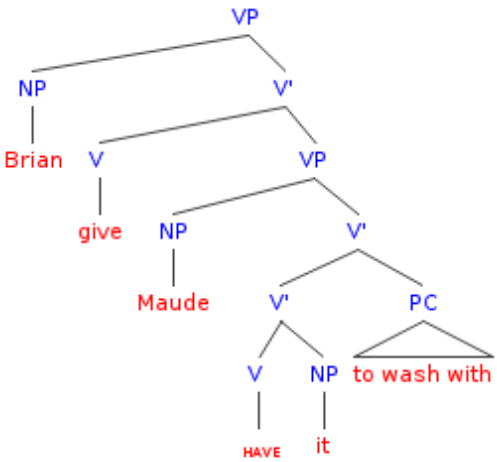
4. a)



b)



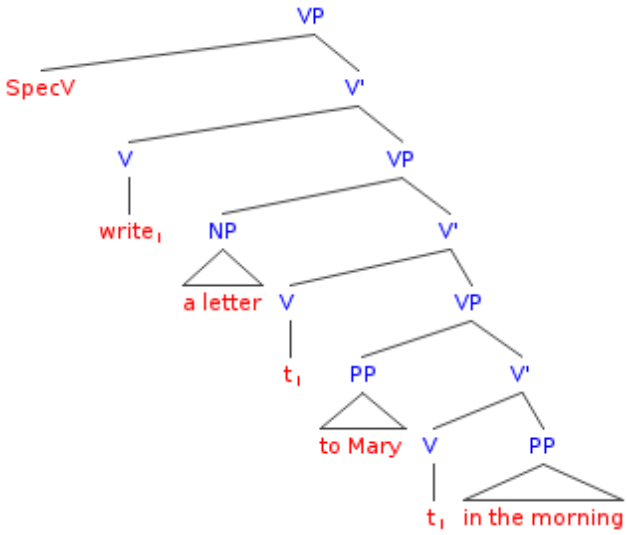
c)



The solution we put forward is that at the start of the derivation the verb and the purpose clause form a constituent. This requirement is accommodated by both the adjunction theories considered here, Larson (1988) building on the work of McConnell-Ginet and Neeleman's (1994) extension of Chomsky's treatment of complex predicates. For an analysis along these lines to work the two elements cannot stay in this configuration; one of them has to move. It is on this issue that Neeleman and Larson differ; extension of Neeleman's analysis to purpose clauses allows the purpose clause to move, while for Larson it is the verb which undergoes movement..

Larson's view of adjuncts is essentially an extension of his view of complements. Every complement or adjunct is contained within its own projection of VP, the verb undergoing head movement through potentially infinite VPs to allow each phrase to merge. Larson gives the structure of *write a letter to Mary in the morning* as follows. (p. 346, ii)

5.



On the other hand, an extention of Neeleman's complex predicate approach would feature the verb and the purpose clause making up a complex head, V^0, and movement of the purpose clause part of the predicate as part of their derivation.

Neeleman's argument is based on constructions which feature both a verbal and a non-verbal predicate, such as those in 6.

6. a) John **painted** the door **green**.
   b) John **throws** that letter **away.**

The evidence given in favour of this view comes primarily from English and Dutch. Two of the areas of English discussed are pseudo-passivisation and V-V coordination.

In pseudo-passives, the complement of a PP is moved to subject position, stranding the preposition. It is commonly proposed that a part of this process is the incorporation of the stranded preposition into the verbal head, forming a complex V^0. This is evidenced by the inability of adverbs to split the verb and preposition in such contexts, whereas this is normally possible.

7. a) John sat (patiently) on the chair.
   b) The chair was sat (*patiently) on (patiently) by John.

If the complex predicate analysis is correct then we would expect particle constructions with PP complements to form 3 part complex predicates under pseudo-passivisation. This is the case. Also, as we would predict, the stranded preposition cannot intervene between the verb and the particle.

8. a) Alison gave in to Colin.
   b) Colin was given in to by Alison.
   c) *Colin was given to in by Alison.

Neeleman's second argument comes from V-V coordination. He notes that it is easy to find examples of particle verbs conjoined with simplex verbs. Quite simply, it is a standard assumption that only like constituents can be brought together by conjunction.

9. I filled in and posted the form last night.

Neeleman argues that these facts, along with those he cites from Dutch, validate the complex predicate analysis.

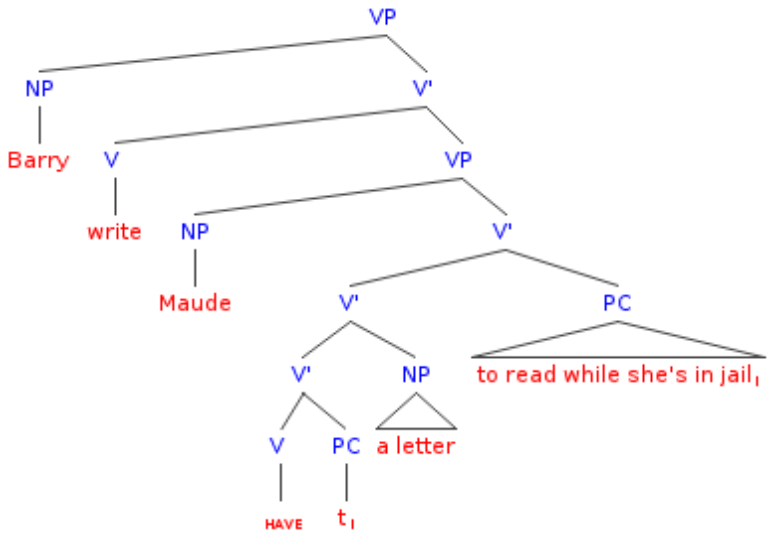
Unfortunately, this evidence does not directly translate to purpose clauses. It seems that conjunction of V+PC and V is unacceptable, as is pseudo-passivisation.

10. a)*Colin bought to play with and broke a gameboy.

b) *John was brought to talk to Mary in.

Extending this analysis to our purpose constructions, we may hypothesis a structure such as that in 11.

11.



Note that in order for this structure to work we must adopt the assumption, present in Aoun and Li's work on scope (1989), that chains are relevant for c-command. As the complement of the lower VP does not c-command the purpose clause in the final structure, binding relations must be sensitive to c-command of traces.

Larson (1988) also makes reference to conjunction to motivate his analysis. In his proposal the constituency in 12 is explained by an extension of the right branching structure we see in complements.

12. I wrote [a letter to Mary in the morning] and [a note to Max during the afternoon].

This view that “adverbs are not the outermost adjuncts of V but rather its innermost complements" allows the relevant material to form a constituent.

Clearly, current theories of adjunction have not been designed with purpose clause data in mind and

as such their ability to deal with them is unclear. A comprehensive effort to evaluate or reformulate such a theory would be somewhat tangential to our overall aims here. As such, whichever approach we choose will constitute less a theoretical commitment and more a notational convenience. Either choice is capable of filling our most important requirement; that the verb and the purpose clause be generated as a constituent.

Although either of these analyses is sufficient for our requirements in this respect we shall adopt that of Neeleman (1994). The main reason for this echoes that cited for dispensing with empty VP shells in the ditransitive construction. It was stated that the use of contentful VPs denoting result states was preferable to empty VP shells which functioned only generate the correct word order and c-command relations. As such it would this be inconsistent to adopt an approach which returns us to the use of empty VPs and verb movement. However, it may well be possible to translate much of what is said into a more Larsonian model.

6. Adjunct Control

In this section a view we shall put forward a view of purpose clause control based on event semantics. This view will be supported by a discussion of the asymmetry of HAVE relations and will be shown to make correct predictions regarding control in adjuncts from Korean source applicative structures.

6.1 Argument structure alternations and control

A brief look at the behaviour of control in purpose clauses with regard to structure altering transformations shows that an account of controller choice based on semantics is preferable to one which attempts to explain the facts with notions of syntactic locality. First examining passives, we see that the links between antecedents and gaps remain thematically consistent when the position in the clause of either antecedent or gap is changed by passivisation.

1. a) I gave him it _ to drink _ at the party.
   b) I gave him it _ to be drunk at the party.
   c) He was given it _ to drink _ at the party.
   d) It was given to him _ to drink _ at the party.

In every case the theme in the matrix clause controls the theme gap in the purpose clause and the recipient in the matrix clause controls the agent gap in the purpose clause, when one exists. We see similar findings with the dative alternation in the matrix clause.[12]

2. a) I gave him it to give to Joe.
   b) I gave it to him to give to Joe.

Here, although the recipient and theme reverse their order between a) and b) the control possibilities remain the same.

On the basis of this, in addition to further findings to be discussed in the following section, the theory of controller put forward here is semantic in nature.

6.2 Chierchia and the thematic hiearchy

Of the theories of control discussed in section 2, Chierchia (1989) is almost entirely alone in trying to extend a theory of complement control to control in adjuncts. While this kind of consistency of approach is to be encouraged, any success of Chierchia's approach is, we feel, undermined by his reliance on a hierachy of thematic roles. This hierarchy, to the best of our knowledge first suggested by Jackendoff 1972, has been put to use in several seperate areas of grammar.

3. Theme > Goal > Agent . . .

It at first appears that this hierarchy explains the facts of controller selection, as evidenced by the basic types of complement control.

4. a) Evelyn told Cuthbert _ to leave.
   b) Cuthbert tried _ to leave.

[12] Curiously, the dative alternation in the purpose clause is unacceptable to some speakers; the V NP NP configuration is not allowed, only the V NP PP.

1. I gave him it to give to Colin.
2. *I gave him it to give Colin.

It appears that the speakers who reject examples like 2 also reject 3. On this basis we could guess that the two different groups of speakers generate two different structures for 2, as shown in 4.

3. *I gave it him.
4. a) . . ._ to give _ Colin.
   b). . . _ to give Colin _.

I shall leave a more detailed look at these differences to future research. Preferably by someone else.

In each case the controller is the argument which is highest on the thematic hierarchy; the theme in a) controls because it is higher on the hierarchy than the agent whereas in b) the agent can control in the absence of a thematic argument higher on the hierarchy.

This effective data coverage seems to extend to the domain of adjunct control also.

5. a) Clementine brought him _ to talk to the children.
   b) Sandra baked Colin a cake in order _ to impress him.
   c) Sandra sent it to Colin _ to eat _ at the party.

The controller of the subject gap in a) is the matrix theme, in b) it is the agent, as it is the only accessible controller. If we assume that in instances of multiple gaps controller choice is carried out sequentially starting with the lowest gap then the arrangement of theme controlling object gap and goal controlling subject gap in c) is also predicted; the object gap gets first choice of controller and chooses the argument which is highest on the hierarchy, the theme, leaving the recipient as the next available controller of the subject gap.

In addition, controller choice on this basis is unaffected by the argument structure alternations discussed in section 6.1, as a consequence of the hierarchy's disregard for syntactic position. A theme may appear in object position or subject position; a theme is a theme is a theme.

There are several reasons for not adopting an approach to control based on a thematic hierarchy. Firstly, it comes across problems in dealing with *promise* class verbs.

6. Albert promised her _ to be on time.

Despite the presence of a theme, it is the agent in 4 which is the controller. The only option for a trully hierarchical approach here is to resort to the same thing as some syntactic approaches to control and stipulate examples like these as exceptional.

Secondly, as I will show shortly, when dealing with control in purpose clauses thematic roles, as they are currently formulated, are too coarse to account for all the control patterns we find.

Despite this, it might be foolish to ignore what predictive power the thematic hierarchy has. While the hierarchy itself is not a sufficient means of explanation it is highly unlikely that the data patterns are entirely coincidental and as such we would expect to find an underlying cause. Only once this has been established does the thematic hierarchy become surplus to requirements.

6.3 An event-semantic view of purpose clause control

My main aim here will be to build on the observation, already made by several others, I believe first Jackendoff, that control in purpose clauses is dependant on the result state of the matrix event. I hope to develop this idea to show that the event semantics of the matrix predicate determines control in such a way as to be sensitive to the coercions in the meaning of the matrix verb brought about by argument structure augmentations, such as the adding of an argument to produce a ditransitive from a monotransitive. In this case, the sense of transfer encoded by the ditransitive construction means that potential actorhood in the purpose clause passes from the source to the recipient along with possession of the theme.

Consider for a moment one class of verbs which can appear in the ditransitive construction, verbs of creation such as *bake*. When these are used monotransitively with an OPC we see subject control of the subject gap, yet when they are used ditransitively the subject gap of an OPC is controlled by the indirect object.

7. a) Rob baked them _ to eat _.
   b) Rob baked Ally them _ to eat _.[13]

It is my claim here that the difference in control is not a product of the structural changes introduced by the addition of an indirect object but rather a product of the change in the verbs meaning when it is used in this construction. The event denoted by the monotransitive involves the coming into being of some baked goods as a result of some action or sequence of actions carried out by Rob. Importantly, the baked goods are still Rob's to eat. At worst the control of the subject gap in a) is an example of partial control in the sense of Landau (2001) and Rob is among those doing the eating.

Use of *bake* in the ditransitive construction on the other hand adds a sense of transfer to the verb's core meaning. Once again the event involves the coming into being of some baked goods as a result

[13] Although grammatical this example unfortunately does not refer to an event which has taken place.

of some action or sequence of actions carried out by Rob, but this time it is specified that either the baked goods have arrived in Ally's possession or that Rob carried out the action(s) for Ally's benefit and, all being well, he shall receive them subsequently. The result of this is that Rob is no longer in a position to eat the baked goods over which he diligently slaved, that questionable pleasure being reserved for Ally.

In fewer words, Rob can't eat them because he doesn't have them. Ally has them so he can. Syntactically this is realised as object control of the subject gap being the only viable option. This does a lot to demonstrate the centrality to purpose clause control of notions of possession and transfer.

Another area which gives additional evidence that this is what's going on is the difference between semantically related verbs which encode different information in their result states. One such pair is *buy* and *sell*. Pairs like this provide fairly strong evidence that control possibilities are not to be stated in terms of thematic roles; the two arguments bear the same role in each case but the semantics of the verb itself gives different controller choice possibilities.

Consider the following pair of question answer pairs.

8. Q: Why did you get that tv?
   A: I bought it to watch films on.
9. Q: What happened to your tv?
   A: *I sold it to watch films on.

In 8 the subject gap can be controlled by the subject because the tv has moved into their possession. In 9 this control configuration is impossible as the tv is no longer in the possession of the subject and as a monotransitive verb *sell* does not specify to where or to whom the tv has been sold. When *sell* is used in the ditransitive construction however, this kind of purpose clause is perfectly viable.

10. I sold Colin it to watch films on.
11. Q: Where did Colin get your TV?
    A: *I sold it to watch films on.

Example 10 is fine because the result state specifies where the tv has gone; it is in the possession of

Colin, who can now use it to watch films. Note that Colin has to be syntactically realised for this to be the case; despite *Colin* being a discourse salient recipient in 11 he cannot control the subject gap of the purpose clause.

An important point that this illustrates is that the semantic representations we take to be underlying control here are still linguistic in nature; our theory does not amount to a reduction of control to dependance solely on knowledge of real world states of affairs. We may not rely on the same kinds of semantic concept as previous theories but, as *Colin*'s inability to control in 11. demonstrates, we have not entirely jettisoned grammar as a means of explaining control behaviour.

What these examples show is that the differing levels of event structure detail encoded by different matrix clause constructions make a difference to control; an agent cannot control in the presence of a specified recipient and an unspecified recipient cannot control at all. The pair in 10 and 11 show once again that there is a syntactic component to control; discourse antecedents, no matter how salient, may not enter into OC relations.

6.3.1 The asymmetry of HAVE

Most ditransitive verbs denote events in which an agent acts to transfer possession of a theme to a recipient and, as the examples in the previous section show, this transfer feeds the possibilities of control relations. The result of this transfer, as overtly expressed in the view of ditransitive syntax in section 4, is the existence of a HAVE relation which holds between the recipient and the theme. In our event semantic approach to control, a purpose clause attached to a ditransitive matrix clause acts as a modifier of this HAVE relation result state. This view is validated by the similarities in control possibilities between ditransitives with HAVE result states and lexical *have* clauses; *have* and HAVE both allow only object gap purpose clauses.

12. a) He has it _ to eat _.
    b) Bill gave him it _ to eat _.
    c) *Bill has it _ to cover the table.
    d) * Bill gave him it _ to cover the table.

Our interpretation of the purpose clause is the same in both examples a) and b); *he* eats *it*. The

important point to be made here is that this control configuration is rigid; analogous examples in which an argument in the position of *it* controls the subject gap or an argument in the position of *he* controls the object gap are not found. It is also not possible to attach SPCs to *have* or HAVE clauses. The SPC examples are ungrammatical provided they are given the interpretation that *it* controls the subject gap; a grammatical reading is available for some speakers in which the purpose clause contains an ellided *with* and the control relations mirror those in a) and b). However, this interpretation is an instance of OPC, not SPC, and as such its availability is irrelevant to our point; if interpreted as containing an SPC c) and d) are both ungrammatical.

These patterns are a result of the asymmetric nature of the relationship which *have*/HAVE denotes; the HAVEee is in the custody of the HAVEer and as such under its control. This holds regardless of the relative referential properties of the two NPs involved. That is, questions of animacy and potential actorhood do not result in acceptable subject gap purpose clauses or control of subject gaps in object gap purpose clauses by a theme.

13. Arthur sent Galahad Lancelot _ to do something agentive to _.

Here Galahad must be controller of the subject gap, Lancelot controller of the object gap. The one way nature of this relationship is fairly intuitive; I have a mug but the mug doesn't have me. We can spell this out in vaguely formal terms.

- If X HAVES Y, Y doesn't HAVE X.

This asymmetry has been noted in previous work, with several researchers arguing in favour or a decomposition of *have* into BE and AT. For example, Freeze (1992) proposes that the *have* locative is formed through incorporation of a P head into a copular Inf. head.

This view receives a good deal of cross-linguistic corroboration. In several languages *have* is not monomorphemic but is in fact represented periphrastically with a copula and a preposition. Freeze gives examples of this from Gaelic and Russian respectively.

14. a) tha paenn aig Mairi
    cop. pen at Mairi
    'Mary has a pen'

b) u menja byla sestra
at 1sg.GEN was sister
'I had a sister.'

Of course, if crosslinguistic equivalents of *have* are decomposed into the crosslinguistic equivalents of *be* and *at* we may be led to wonder whether HAVE itself is made up of BE and AT and consequently which part of this decomposition contributes the asymmetry. Taking a similar approach to AT to that taken to HAVE above we see a similar pattern; I am currently at my desk writing but my desk is not at me.

- If X is AT Y, Y is not AT X.

We may therefore be inclined towards the view that it is AT which contributes the asymmetry. However, a thorough study of the exact nature of the decomposition of predicates would require far greater space and inclination than can be granted to it at this stage in a work of this scale.

The asymmetry of the notion of possession is thus observable in three different contexts; PC control with lexical *have*, PC control with the propositional HAVE found in the result state of ditransitives and overt decomposition of lexical *have* in a variety of languages. As a result, in any situation in which a HAVE relation feeds a subsequent event, the HAVEer is the only viable candidate to act in that event and the HAVEee must be acted upon. This provides a full and satisfactory explanation of the purpose clause control possibilities with matrix ditransitives.

6.3.1.1 Rouge herring

We shall now deal with a set of apparent counter examples to the assertion that themes do not control subject gaps and that SPCs cannot appear on ditransitive clauses. These come in sentences such as the following which ostensibly contains a dative double object matrix clause.

15. MI5 sent a spy to Russia to kill Putin.

We believe however that this example, and others like it, in fact contain the kind of pseudo-ditransitive discussed briefly in section 4 which contain a direct object and a PP adjunct headed by *to*.

Fistly, note that if *to Russia* is omitted the meaning remains largely unchanged.

16. MI5 sent a spy to kill Putin.

Secondly, there is no non-dative shifted equivelant which preserves the same meaning.

17. MI5 sent Russia a spy.

Although grammatical, 17 is not referentially comparable to 15. In 17 *Russia* is construed as referring politically in some way; the spy is received by a Kremlin department analogous to MI5. In 15 on the other hand, *Russia* merely refers to a physical object, a land mass to which the spy must go because that's where his target is. Saying *send a spy to Russia* implies the same kind of transfer as is implied when you approach the desk in a post office and ask to send a letter to France; the PP is an adjunct which denotes the endpoint of motion, not a recipient or a beneficiary. This view is given additional support by the acceptability of prepositions other than *to* in this context.

18. a) MI5 sent a spy through Russia to kill Putin.
    b) MI5 sent a spy under Russia to kill Putin.

To the extent that we accept tunnelling under Russia as a reasonable means to the end of getting to Putin's lair on the other side, the above examples make it clear that examples like 15 are not double object datives.

Further evidence in a similar vein is available with *bring (along)*. If we construct examples in which the PC denotes an event which is inappropriate for the setting which the agent brings the theme to then we can demonstrate that the varying acceptability of these examples arises as a result of the differing event type readings which are caused by differences in argument structure.

19. a) Gunter brought Ethell to talk to.
    b) Gunter brought Ethell along to talk to.
    c) [Q]Gunter brought Ethell to the Quaker meeting to talk to.
    d) Gunter brought Ethell along to the Quaker meeting to talk to.[14]

[14] Quaker worship is often conducted in silence. The superscript small caps Q here denotes "grammatical but

The explanation for this on our account is that the pair of c) and d) differ in their result states. In c) *to the Quaker meeting* is an argument of the verb and as such plays a part in determining the result state of the VP; the unacceptability arises because the result state situates Gunter and Ethell at the Quaker meeting, where speaking is not allowed. On the other hand, in d) *to the Quaker meeting* is an adjunct (the third argument slot may be filled by *along)* and therefore does not play a role in determining the VP's result state. This means that the act of bringing Ethell along is not specified for an endpoint and can therefore have a progressive reading; Gunter brought Ethell to talk to during the bringing rather than at the Quaker meeting when the bringing is over.

When we discount faux double objects such as these the generalisation that there are in fact no subject gap purpose clauses with matrix ditransitives appears to be accurate. This reinforces the assertion that ditransitives' result states specify a relationship between two arguments; modification of this result state must necessarily involve reference to both arguments it contains, thus an OPC is the only licit purpose clause adjunct in these contexts and, due to the asymmetry discussed previously, only one configuration of controllers is possible.

6.3.2 Result states beyond ditransitives

As mentioned above, we do not see ditransitive matrix clauses from which the theme controls the subject gap of a purpose clause (except where the adjunct is passive). 20 is only grammatical if *Henry* is looking after *them*, *them* cannot look after *Henry.* This is something which is possible with some monotransitive verbs.

20. Dave brought Henry them _ to look after _.
21. a) Heinrich brought Samson _ to talk to _.
    b) Heinrich brought Samson _ to talk to the kids.

In 21 the matrix clauses are the same and yet license two different control configurations. Clearly, there must be some difference between monotransitive and ditransitive clauses which explains this difference. Given the proposal that control configurations are dependant on result states, we must look for some explanation there.

religiously insensitive".

Referring specifically to the matrix clause in 21, the event semantics means that once the event of bringing has reached its conclusion Heinrich and Samson are both cotemporaly present at a given location. With ditransitive verbs this is not the case. The sense of transfer means that the part of the semantics of the matrix clause which is relevant to the result state is the change in possessor, from the agent to the recipient, of the theme. Therefore the information specified in the result state is that the theme is in the possession/custody of the recipient; the agent is not involved. This is overtly expressed in the decompositional view of ditransitive syntax outlined previously. There the lower clause represents a HAVE relation which holds between the recipient and the theme.

This explains the rigidity of control in adjuncts on ditransitives, but what explains the variability of control with monotransitive *bring*? The option which immediately jumps out at us is simple; if purpose clause control is determined by result states and a single matrix clause licenses multiple purpose clause configurations then that matrix clause must have more than one possible result state.

We believe that the different control possibilities with *bring* are a result of subtle variations in its meaning which give rise to different result states. To the best of our knowledge there are three different meanings for *bring*.

First there are examples in which the bringer HAVES the bringee both before and after the act of bringing. These are the cases in which we find OPCs controlled in the same manner as those we find attached to the ditransitive construction.

22. Xavier brought a calipo _ to eat _ but it melted in the car.

The second kind of monotransitive bringing is the kind in which the bringer starts out HAVEing the bringee but passes possession of it to a third (syntactically unrealised) party. Unfortunately, because this third party is left implicit it cannot control. As such, the only purpose clauses which are licit with these instances of *bring* are passives.

23. Asterix brought Dogmatix _ to be sacrificed.

We find corroboration for our view that implicit arguments can't control by observing that if we make the purpose clause active then *Asterix* must be interpreted as at least partial controller of the subject gap.

24. Asterix brought Dogmatix _ to sacrifice _.

Finally, our third kind of bringing is that in which the bringer may HAVE the bringee before the act of bringing but once the bringing has taken place their state is merely one of cotemporal cospatiality and the bringee is free to act as it pleases.

25. Jezebel brought Beatrice _ to talk to the kids.

We may describe these three possibilities as below, the left describing the state of affairs before the bringing, the right describing the state of affairs after the bringing has taken place.

- X HAVE Y > X HAVE Y
- X HAVE Y > Z HAVE Y (implicitly)
- X HAVE Y > Y AT Z (where Z is a location)

These three possibilities provide a clear explanation for each of the observed control possibilities. The HAVE relation in the first case is the same as that found in ditransitive result states and as such is subject to the same control restrictions. The implicit nature of the HAVEer in the second case means that it is unable to control and thus only passive OPCs are permissable. Finally the AT relation that the bringee enters into in the third case means that it is no longer HAVEed by anyone and as such can control a subject gap.

This explanation of the ways in which the control behaviour of monotransitive *bring* differs from that of ditransitive clauses is an entirely straightforward extension of the explanation already given for the behaviour of ditransitives themselves. Event semantic notions of possession and transfer delimit what is possible in terms of control, thus the subtle interpretational differences which are found with *bring* feed different control relations.

6.3.3 Korean applicatives

Further cross linguistic corroboration for an event semantic view of controller choice comes from ditransitives in Korean.[15] Here we find ditransitives whose applicative object is structurally analogous to those in English but which bears the role of source rather than beneficiary or recipient (Pylkkänen 2008). Compare the pair below.

26. a) The thief stole Mary a ring.
    b) ?Totuk-i Mary-hanthey panci-lul huimchi-ess-ta.
    thief-nom. mary-dat. ring-acc. steal-past-plain.
    "The thief stole a ring from Mary.

(Pylkkänen, p.16)

As with all ditransitives in English, *Mary* in a) is a recipient. However, the low applicative *Mary-hanthey* in the Korean example is a source; rather than a gentleman thief showing his affection for Mary by giving her a ring he has stolen for her, a dishonourable robber has taken some of Mary's valuables without her consent.

When we combine this fact with our event semantic theory of purpose clause control we arrive at a definite prediction; if an OPC is attached to the Korean example in 26. b) then the subject gap will be controlled by the matrix subject.

27. a) The thief stole her$_i$ it$_j$ _$_i$ to eat _$_j$.
    b) ?Ku-nun$_i$ kunye-hanthey ppang-ul_$_k$ [_$_i$ _$_k$ meku-lyeko] hwumchi-ess-ta.
    he-Top she-Dat bread-Acc eat-to steal-Past-Decl
    `He stole bread from her to eat.'

As the indexes indicate our prediction proves to be correct. Contrary to what we might expect on the basis of the analogous English example, it is the thief who comes to be in possession of the ring and as such is the controller of the subject gap in the purpose clause.

It should be noted here that these sentences are not perfect and there is a preference for a structure in which the source is represented by a PP. However, this is not too damaging for our analysis; the

[15] I owe a substantial debt of gratitude to Chung-hye Han for her help constructing and judging the Korean examples.

important point, which still stands, is that to the extent that sentences like 27. b) are acceptable as a whole, the control relations indicated above are correct. Questions of grammaticality here do not arise as a result of incorrect indexing of controllers and gaps.

This provides additional support to our analysis of control. Ditransitive *steal* in Korean, while structurally analogous in the relevant respects to ditransitive *steal* in English, is thematically different and as such provides a predictably different result state. Because of this, and in line with our expectations, we observe subject control of the subject gap in an OPC.

A final point here, similar to that made by Sag and Pollard (1991) regarding the unfeasability of a verb meaning *promise* but controlling like *order*, is that it is as good as impossible to imagine that control in 27. b) could be any other way. If we were to offer this example, minus the indexes, to a linguistically naïve family member (who just happened to speak Korean and to whom we had managed to explain the basics of control theory[16]) and ask them to predict which matrix argument would control which gap they would almost certainly give the correct pairs. Indeed, they may possibly wonder why someone who asks such inane questions was allowed to write a dissertation on syntax to begin with.

Not only does a semantic explanation for this behaviour appear to be an obvious choice, it is also nearly impossible to see how a syntactic approach to control would predict the patterns observed here.

Though hardly scientific, the intuition that the control configurations here inevitably as they are gives us a clear indication that the explanation being put forward here is on the right track.

6.3.4 On gaps again

I shall now return to the observations made in section 3.4 and assess the suitability of the event semantic analysis of purpose clause control laid out above to explaining them. The observations were, first, that the number of gaps in a purpose clause is always equal to the number of internal arguments or the number of total arguments of the matrix verb and second that it is impossible for an adjunct to contain more then 2 gaps. In fact, under the analysis put forward here, these observations receive roughly the same explanation.

[16] I have not attempted to carry out this experiment for obvious reasons.

An explanation of the first comes naturally from our theory of purpose clauses as modifiers of result states. Considering first monotransitives, here we find both SPCs and OPCs, the same number of gaps as internal arguments and the same number of gaps as total arguments respectively. For an explanation here the reader is referred back to section 6.3.2 and the discussion of the nature of monotransitive result states found there. Those who have been paying attention will remember that there are three result state possiblities. For those whose attention has perhaps been required elsewhere, these are reproduced below.

- X HAVE Y > X HAVE Y
- X HAVE Y > Z HAVE Y (implicitly)
- X HAVE Y > Y AT Z (where Z is a location)

In the first instance an OPC is licensed, yielding the same number of gaps as total argument. The second, as discussed previously, may only license a passivised OPC; X cannot be an antecedent of a subject gap because it no longer HAVES Y. In this instance the number of gaps is equal to the number of internal arguments. This is also the case in the final result state possibility; Y is no longer HAVEed by anyone and as such is free to do whatever it likes.

With ditransitives, as has been explained already, the only licensed purpose clause is an OPC, having the same number of gaps as the matrix verb has internal arguments. The explanation here once again falls out from our event semantic view of control. Purpose clauses with the same number of gaps as internal arguments in the matrix verb appear when the external argument of the matrix verb acts in such a way prevent any relationship from holding between itself and the theme. With monotransitive *bring* this gives us one gap. With ditransitives, because the external argument acts in such a way as to cause a relationship to hold between the theme and a third argument, we get two gaps. Because the agent always acts this way in ditransitives this is the only possibility.

Our second generalisation, that purpose clauses cannot contain more than two gaps, is explained in a similar way. Simply put, if it is our assertion that purpose clauses are modifiers of the result states of events then the possibilites of control in purpose clauses are restricted by the nature of states. We have already seen an example of a specific state, HAVE, restricting the possibilities of controller

choice but our point here is somewhat more general; a purpose clause may only contain as many gaps as there are potential antecedents in the state it modifies. Thus the monotransitive result states allow either one or two gaps, HAVE requires two gaps and three gaps is impossible because there are no three place result states.

In the interests of clarity, this assertion is not to be taken to mean that three place states do not exist, the example below clearly depicts one. However, such states are never the results of events denoted by verbs. This could only be possible in a language which had a verb meaning something along the lines of [W CAUSE [X ENVY Y Z]] and, alas, I know of no such language.

28. Rob envies Ally his pictures of dogs.[17]

I have shown here that the two observations regarding the distribution of gaps put forward in 4.2.1 receive a natural uniform explanation when seen in the light of an event semantic theory of purpose clause control; it is the properties of states which restrict the properties of purpose clauses. The first observation can thus be stated more accurately as "the number of gaps in a purpose clause is equal to the number of arguments in the result state predicate of the matrix clause."

This shows that our observations are in fact based on basic properties of states and further contemplation shows this to be a desirable outcome. It means that aspects of gaps' distribution receive an explanation on a uniform basis with their interpretation. This is a desirable outcome. If two aspects of gaps which we might reasonably think of as being distinct can be explained with reference to the same set of foundational linguistic properties then not only do we have corroboration for our position but we also relate control phenomena to the basic characteristics of language.

6.4 Summary

This treatment of control has several merits, even leaving aside its explanatory power. Well documented effects of using verbs in different constructions are shown to lead to clear cut, predictable changes in control possibilities; the data from Korean show that this analysis easily transposes across languages and the generalisations summarised in section 3.4 are given clear

[17] Rob is a cat person.

explanations in terms of fundamental aspects of language which are independent of control theory.

The desirability of such explanations is not to be understated; delimiting the possibilities of gap distribution, and other phenomena, through the application of very basic linguistic principles is a good indicator that this approach is well grounded.

7. Back to Complement Control

To this point it has been the primary goal of this paper to show that controller choice in cases of purpose clause control is determined on an event semantic basis. Particular focus has been given to the event semantic consequences of argument structure augmentations, the alterations these make to result states and the ways in which they delimit the possibilities of control.

A theory of control which is dependant on result states to feed controller choice is possible in the context of purpose clauses because of the temporal relationship which necessarily holds between the event denoted by the matrix clause and that denoted by the purpose clause; the matrix event is always the temporaly prior of the two and as such it is logically sensible for its outcome to determine the possibilities in the purpose clause.

1. a) Ally built it _ to fly _ into space.
   b) Ally trained with NASA _ to go into space.[18]

As any reasonable person would, Ally dreams of exploring the stars. In a) we have an OPC which demonstrates the direct method by which Ally shall achieve this. b) contains an IOC and, though a little less directly, also denotes a means by which Ally may eventually journey to the great beyond.

This relationship is found in all purpose clauses; one event leading to the possibility of another. In complement control this is not the case, as is most clearly evidenced by the fact that the event denoted by the infinitival complement is a component of the event denoted by the matrix verb; it is not possible to try to do nothing[19], an actional complement is required for a *try* verb/predicate/event to be coherent.

[18] Given the retirement of the shuttle fleet, the event denoted by a) may be a better means for Ally to achieve his ambition than the event denoted by b).

[19] Assuming that doing nothing is a willfull act and therefore something.

However, our observation regarding the temporal links between events in purpose clause control can be extended to complement control.[20] Although the two events in these cases are interdependant, the complement is always future oriented.

2. a) Ally tried to get to the office on time to hand his dissertation in.
   b) Ally wants to drop out and live in a cave.

In a) the event of getting to the office, so far as we assume it takes place, is subsequent to the event of trying. If Ally gets to the office then he is no longer trying.

In b), Ally's wanting is necasserily prior to his hypotheticaldropping out and living in a cave. Should he fulfill this desire he can no longer be said to be wanting. With this in place, the kind of event based view of control advocated here can be extended to complements.

However, though similar, complement control and adjunct control are not determined in entirely the same way. The difference is that adjunct control is a relationship between two saturated predicates; complement control is a relationship between one saturated predicate, the complement, and the *content* of another, the matrix verb.Thinking in general terms of arguments, this makes control complements fairly unexceptional; just as the exact nature of the affectedness of a theme is different depending on the semantic content of the verb, so the affectedness of an infinitive complement, in the form of controller choice, is determined by the semantic content of the matrix verb.

Control in complements is not determined entirely by the matrix verbs content however, there is still some sensitivity to event structure.

3. a) Ally wants to finish this section.
   b) Ally wants Rob to finish this section.

The difference in controller choice in these examples is due to the addition of an extra argument. This change in control is reminiscient of some of the differences in control of purpose clauses between monotransitives and ditransitives.

[20] One apparent counter example to this assertion is *manage*, which would appear to be past oriented. However, see Wurmbrand 2001 for an account of *mangage* as a restructuring verb. If we accept this account then our generalisations hold.

We may observe here that our view of complement control, though built upon findings from elsewhere, bears something of a resemblance to previous theories of complement control (Culicover and Jackendoff 2003, Sag and Pollard 1991 and others). This is due at least in part to the inevitability of similarities between semantic theories of control; the means by which controller choice is determined, the core meaning of the matrix verb, is essentially the same in every instance and thus the differences come in the terms in which the chosen controller is described. Although these controller selections may be stated at different levels of representation, in terms of thematic roles or arguments of predicates, the notions on which these theories of control rest are largely consistent.

The observant reader may have noticed that at no stage in the discussion of our theory of control has there been mention of classes of control verbs as there is in other semantic approaches to control such as Culicover and Jackendoff 2003 and Pollard and Sag 1991. Whether or not these authors mean to imply that these classes actually exist or merely intend them as a notational convenience is not made explicit but here we argue that there is no merit in invoking them as real. Indeed, postulating classes of verb in a semantic approach to control is not only unmerited, it introduces unneseccary complexity to the grammar and as such is positively undesirable.

The argument against verbal classes is simple; if controller choice is determined by semantic properties of the verb then it must be done on a verb by verb basis, with each individual verb indicating one of its arguments as controller. With this done, nothing more is necessary.

This argument could also be used to argue that thematic roles are not the correct terms in which to discuss controller choice. Again, because the choice of controller is dependant on idiosyncratic properties of the verb in question thematic roles would appear to be too course grained; while previously controller choice has been described in terms of concepts such as agent and theme, we argue that event specific notions such as TRYer and EXPECTer/ee are more appropriate.

Consider *promise*. In a semantic theory of control *promise* controls as it does because of what it means to make a promise; when you promise (someone) to do something you make a commitment that you will do your best to act in such a way as to bring that something about. As such it is your role as a PROMISEEer which determines that you are the controller. Transposing this into thematic terms adds an extra step to the manner in which we state controller choice which may be unnecessary.

- Because of what *promise* means the promiser controls.
- Because of what *promise* means the promiser controls and the promiser is an agent.

Of course, if we view thematic roles as being a tool of the interface between semantics and syntax which generalise over the predicate specific notions we discuss here in order to provide a consistent basis for things like argument realisation (i.e. Agents are subjects), and bearing in mind that our story here is one of semantic considerations underpinning a syntactic phenomenon (OC), then we could reasonably take the view that at the stage where the processes we are concerned with take place these very narrow predicate specific characterisations of arguments have been replaced by broader thematic ones.

Yet our investigation of purpose clause control implies that this is not the case; there thematic roles proved to be too coarse to accurately describe controller choice and if we wish to present a unified theory of control this should be extended to complements.

However one chooses to position oneself with regard to this choice, it is a fairly clear conclussion that in all but a few narrow details previous semantic theories of control have been essentially correct. As has been mentioned, there is a tendancy for semantic theories of control to appear as if they are all saying the same thing in different terms and essentially the theory we put forward here does nothing to break this trend. However, it should be noted that our view of complement control is not a product of a study of control in complements, rather it is the generalisation of what we believe to be robust observations on control in purpose clauses to the domain of complement control.

This generalisation from one area to another is valid because of the syntactic similarities, those discussed in section 3.3, and the semantic similarities, the future orientation in both cases, between complement and purpose clause control. Further, the fact that a single view of control may be applied in areas previously thought to be largely distinct we believe adds validity to our view of control.

8. Conclusions and Things to Consider

The theory of control that has been developed here could be understood in some ways an extension

of previous semantic theories. However, the fact that our view of complement control is reached by taking adjunct control as a starting point and working backwards adds would seem to provide further evidence that a semantic approach is the correct one; a theory of control which deals with the different cases of OC in a unified manner is a desirable goal.

It has been shown that the control configurations found in purpose clauses are determined with reference to the result state of the matrix clause to which they are attached. Control relations are further restricted by the asymmetry of these result states; in the case of HAVE we observe that only the HAVEer may control a gap denoting an agent while a HAVEee may only control a gap denoting a theme. This shows us that notions of possession and transfer are central to the problem of determining controller choice and we argue that these notions are only captured in a theory of control which is based in event semantics and deals in terms of event specific roles.

A theory which deals in terms of thematic roles is inadequate as their behaviour is not consistent across different predicates; the agent of a buying event may control a purpose clause but the agent of a selling event cannot. Equally, a theory which considers controller choice to be a syntactic phenomenon determined by notions of locality is inappropriate, as is shown when we consider instances of the same predicate which are realised with different argument configurations; it makes no difference whether you *give Clarence a book* or *give a book to Clarence*, the controllers will be the same in each case.

I shall now consider what the implications of our findings are for the notion of a control specific null NP. For exposition's sake I shall refer to such an NP as PRO though I do not intend this discussion to be a critique of any previous formulation of PRO, rather as a description of the properties such an element must have according to our work here and the work of others. That said, our thoughts will inevitably be framed by previous assertions on the nature of PRO.

Most fundamentally we must decide whether we believe that PRO exists. However, if we put this question on hold while we discuss the properties which could be assigned to PRO were we to decide that it exists then we shall create a clear picture of the arguments in favour of its existence. .

So what are the key properties of PRO? In terms of certain features it is much like any other NP; it bears a thematic role and case in the same was as overt arguments do. The examples below also illustrate that this is not merely a case of value transmission. Both the thematic role and the case of

PRO may be distinct from that of its antecedent; it is assigned thse values in much the same way as other NPs.

1. a) John was expected _ to win.
   b) Strákarnir vonast til [að PRO verða hjálpað.
   The boys(N) hope for to PRO(D) be helped(dflt)

(Sigurðsson 1991)

In a) *John* is a patient while *PRO* is an agent, in b) *Strákarnir* is nominative while *PRO* is dative.

From this we may infer that PRO is merged as the specifier of VP, where it is assigned a thematic role, and subsequently moves to specifier of IP, where it is assigned case. So far, so uncontroversial. However, if we with to maintain, as we do, that all the cases of control discussed here are to receive a uniform treatment then any story of PRO which limits its distribution to this position runs into difficulty. Object gaps are clearly not in this position. The only way around this would be to postulate that there are two null NPs which can be obligatorily controlled.

To the best of our knowledge there has been no work done on whether the gaps in purpose clauses bear case in the same way as their complement counter parts. If this proved to be the case then there would appear to be little motivation for distinguishing PRO in complement control constructions from whatever occupies the gaps in purpose clauses, at least on the basis of the factors considered here.

With the above in mind it becomes clear that there is good motivation to postulate the existance of PRO. It appears to enter into a number of relationships that we may usually consider syntactic. In addition to the above, PRO can bind anaphors.

2. Bill gave it to Sally _ to wash herself with _.

Thus in this area our rather inconclusive conclusion is that it is likely that obligatory control constructions feature some kind of syntactically real, phonologically null NP but that the real nature of this NP will only be determined by future research. We believe the first step in this regard is to ascertain whether or not the subject and object gaps in purpose clauses behave similarly to the subject gaps in control complements with regard to case. Of course, should this turn out to be the

case, we are faced with the possiblity of having a vision of PRO which can appear twice in a single clause.

Though these considerations are somewhat tangential to the main thrust of our contribution here, they are none the less important. On the issue of controller choice we feel that progress has been made here, but this is only a part of the puzzle; a full and satisfactory theory of control may only be reached when we have a full and satisfactory account of every component which makes control work.

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